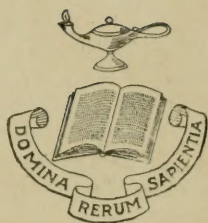


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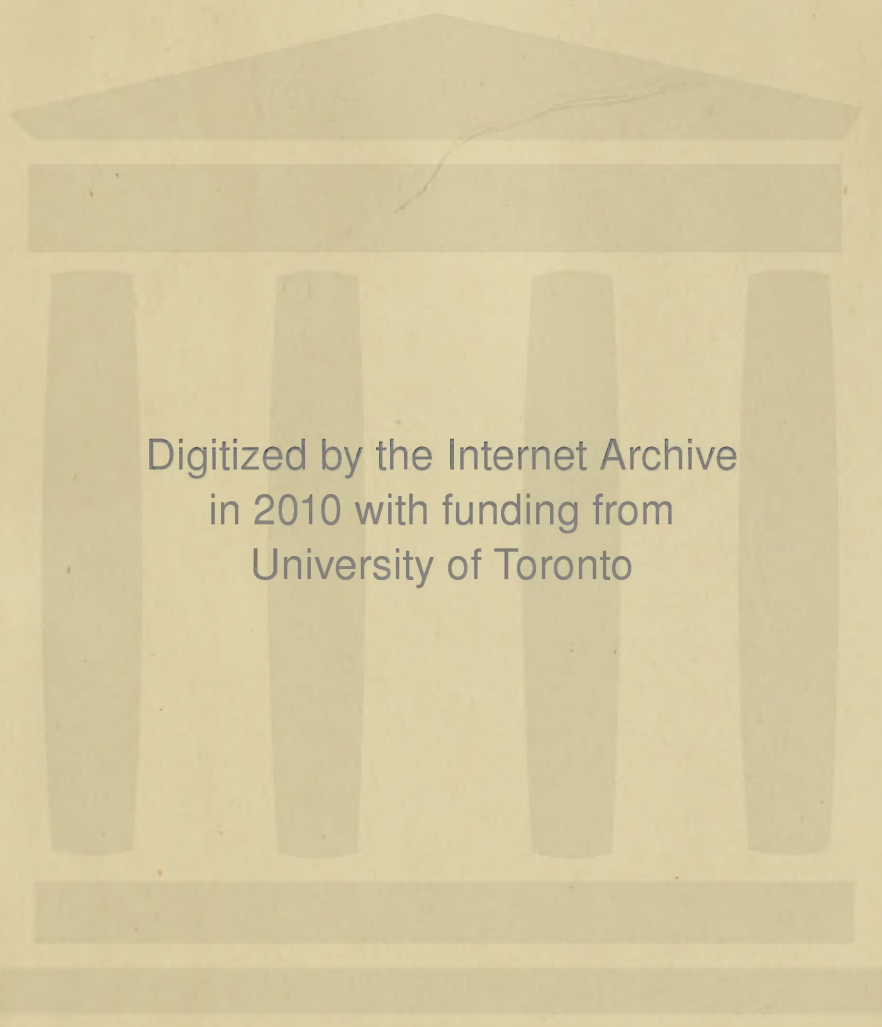


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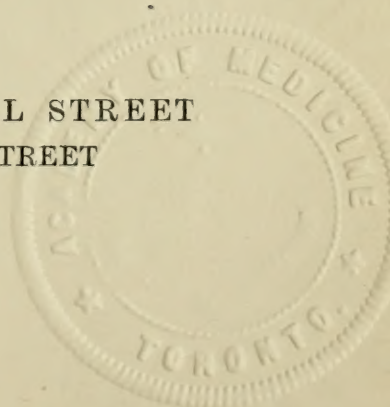
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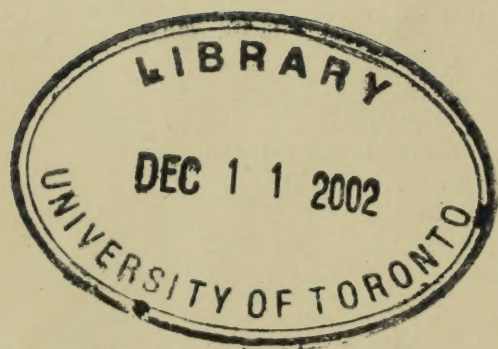
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ORIGINAL ARTICLES.

LEPER HOUSES AND MEDIÆVAL HOSPITALS.*

By CHARLES A. MERCIER, M.D., F.R.C.P.

LECTURE I.

A HOSPITAL, Mr. President, is, I need scarcely say, not necessarily a place for the reception and treatment of the sick. Even now we have the examples of Christ's Hospital, Greenwich Hospital, Chelsea Hospital, the Foundling Hospital, the Huguenot Hospital in Victoria Park, and others, to remind us that a hospital, or, as our forefathers called it, an hospital or spittle, is a place of entertainment, a place where hospitality is dispensed. The word is sometimes used in old documents as the equivalent of an inn, as the term hostler or hosteller testifies, and indeed, the word hotel is but an abbreviation of hospital. This introduction is necessary in order to explain that in treating of early and mediæval hospitals it is impossible to restrict our enquiries exclusively to hospitals for the sick; for in early times there were but few, indeed, we may almost say that there were none, that were founded or devoted exclusively to the care of

* Being the "Fitzpatrick Lectures," delivered before the Royal College of Physicians, London.

the sick. Specialisation is a late stage in the growth of anything, and all early and mediæval hospitals had a mixed function, of which the care of the sick, when it was a function at all, was never the sole function. It is impossible, therefore, to separate the history of hospitals for the sick from that of hospitals generally, and I deal here with hospitals of all sorts and kinds.

There is no record of hospitals for the sick, either under that or any other name, in pagan Rome; but it is to be supposed that some existed, for the first hospital of which we have any record was of considerable size, and history shows that all things grow from small beginnings: nothing springs suddenly into full development.

The first hospital of which we have any record was founded early in the fourth century for lepers, in the reign of Constantine, himself a leper, by one Zodicus, a wealthy noble of his court, whose example was speedily followed by others—Eubolus, Stadius, Eugenius, and Polybius—and later in the same century a rich lady, Olympia, left the whole of her immense fortune to St. John Chrysostom for the same purpose.

The leper house of Zodicus had a varied history. In the next reign, that of Constantius, there was a famine, and the populace complained of Zodicus sustaining so many useless mouths; indeed they believed, or affected to believe, that he was bringing on them the wrath of God by cherishing those whom God had accursed. Zodicus was arrested and imprisoned, and Constantius, hearing that he had a collection of precious valuables, demanded that they should be given up to him. Zodicus agreed, and took the Emperor to his xenon, or leper house, where all the lepers, with the daughter of Constantius, herself a leper, at their head, appeared before him, each bearing a lighted candle. Behold! cried Zodicus, my precious jewels! Constantius was not impressed. He was so furious at the trick played upon him that he ordered Zodicus to be torn to pieces by wild mules, and the lepers, including his own daughter, to be thrown into the Bosphorus. However, he seems to have repented, for in the following year he founded and endowed a great leper house on the same spot. This was burnt in the riot provoked by the persecution of St. John Chrysostom by the Empress Eudoxia in 404. Rebuilt by

Theodosius the Younger in 415, it was again burnt in the riot of Nica in 532. Justinian again rebuilt it on a much larger scale in 540; his successor enlarged it in 577; and after that it had an uneventful history until 1116, when the Emperor Alexius Comnenus enlarged it so that it would accommodate, it was said, 10,000 beds. His daughter, the celebrated blue-stocking Anna Comnena, gives in the fifteenth book of her *Alexiad* a long description of it, from which it appears that it was no longer exclusively a leper house. It was, she says, an actual city, where the unfortunate are nursed and cared for. "The blind are led by those who see, the old by the young; those who have no legs by those who possess them; those without arms by those with them; orphan children are suckled by mothers not their own; the sick are served by those who are well." In the same century it was destroyed by an earthquake, and rebuilt by the Emperor Romanos Argyros.

To return to the fourth century: from 372 onwards St. Basil devoted his life and his fortune to the foundation of a great leper hospital at his native town of Cæsarea. The *Basiliad* is described as a town; it was primarily devoted to lepers, but included numerous annexes for travellers, for monks, for the workmen who carried on many avocations there, and for the sick. St. Basil made it his life's work, spent upon it his fortune, and himself dressed the sores of the lepers and instructed the nurses how to do so. For this he was venerated and admired by all classes, whether Christians, Pagans, or Jews, and at his death in 379 St. Gregory Nazianzen preached a memorable funeral sermon. "What," he cried, "are the walls of Babylon, the Colossus of Rhodes, the tomb of Mausolus, the seven wonders of the world, the pyramids, and the gigantic temples that men have so much admired and historians so loudly praised, what are all these to the immense and wonderful work in which Basil lavished his care on men already dead except to sin; often dumb, with festering bodies whose insensible limbs rotted off them; heartbreaking and horrifying spectacles of human ruin; objects of repugnance and terror; driven from the house, the market-place, the village, and the fountain; persecuted even by their parents; disfigured, unrecognisable, identified only by their names: avoided, shrunk from, detested,

despised by relatives, fathers, mothers, spouses, children; wandering night and day, naked, destitute, exposing their loathsomeness to the gaze of passers-by to move them and obtain alms." Gregory concluded by pleading with fervour the cause of the leper. It is worthy of note that Newman, in his life of St. Basil, never mentions the leper house which was the great work of Basil's life, neither does he, in his life of St. Gregory Nazianzen, quote one word of the splendid tribute paid by St. Gregory to the charity and self-sacrifice of his friend. All that interests Newman are the mental struggles of the saints and the squabble that took place between them.

In the reign of Arcadius (395-488) the pretorian Florentinus built a hospital for the sick at Constantinople. Narses the eunuch built another in 555; Justinian, whose officer Narses was, established and legislated for xenodochia and nosocomia (hospitals), ptochia (poor-houses), orphanotopia (orphanages), brephotopia (foundling hospitals), and gerontocomia (alms-houses), so that it is evident that in his time charity was not only profuse, but also organised and specialised. His wife, the infamous Empress Theodora, converted a palace on the Asiatic shore of the Bosphorus into a penitentiary for five hundred fallen women. In her journey to the baths of Pythea she is said to have distributed as she passed through Bithynia liberal alms to the churches, monasteries, and hospitals that she passed on her way. It is clear, therefore, that as early as the sixth century charitable hospitals for all classes of unfortunates, including the sick, and especially lepers, existed in considerable numbers in the Eastern Empire.

In Moorish Spain and in Syria general hospitals for the sick were established and maintained by the Caliphs, and great schools of medicine grew up around them, giving to the world physicians whose names are imperishable:—Mesué, the elder and the younger; Rhazes, Avicenna, Haly-Abbas, Avenzoar, Averroes, Abdulcasis, and Maimonides form a succession of physicians which cannot be paralleled in Christendom from the ninth to the twelfth century. During these centuries very many leper houses were founded throughout Christendom, but the general hospitals for the sick were very few. Leper houses increased rapidly up to the thirteenth century, but thereafter but few were founded in this country, though they continued to be

founded in France, and in Scotland were only then beginning. By the end of the sixteenth century leprosy was almost extinct in England; it lingered for another hundred years in France, and in the East the great leper house at Scutari was founded by Solyman the Magnificent as late as the year 1540.

Leper houses were hospitals in the sense that they were institutions for the reception of the sick, and in some leper houses there were nurses to dress the sores of the lepers; but, on the whole, leper houses were rather combinations of the prison, the monastery, and the almshouse than hospitals in the modern sense. The primary function of the leper house was to form a prison, or, if we prefer the term, a compulsory isolation hospital, for the seclusion of the lepers from the general population. This, at least, was the case in Christendom. It does not seem to have been so with the xenons of the Eastern Empire, and to this day lepers are suffered to roam at large in many parts of the near East. But it was not always so. Herodotus says that in his time in Persia if anyone is afflicted with leprosy he is driven from the town, and forbidden to associate with other Persians; and Pausanias, in 479 B.C., speaks of a town of Elida called Leproon, because of the number of lepers accumulated there. Neither Aretæus, who gave a minute and accurate account of leprosy in the first century A.D., nor Galen, who gave a detailed description in the second century, nor Oribasius in the fourth century, says that the disease is contagious, or speaks of the segregation of lepers. The first mention after Christ of the segregation of lepers is by Ætius in the sixth century; and Paulus Ægineta, in the seventh, speaks of it as an established practice in his time.

It seems probable that in very early times the seclusion of lepers from association with the healthy arose, not from any belief in the contagiousness of the disease, but in the conviction that it was a punishment inflicted by the Deity for some signal wickedness, and from a desire to escape from participation in the punishment by repudiating those on whom it had fallen. This is a very potent motive among primitive peoples, and many instances of the sacrifice of those who were believed to have incurred the wrath of God are recorded in Biblical and other history. The Christian Church modified this belief, and leaned towards the doctrine, which harmonised with the general

cultivation by the Church of asceticism and mortification, that lepers were rather specially favoured of the Deity, and were made to suffer much in this world in order that they might escape punishment in the next.

Montalembert, in his life of St. Theresa, says that the leper had in his time a certain sacredness in the eyes of the Church and the faithful. Leprosy was considered a gift of God. The hand of God had touched the leper. He was venerated, and some good Christians even prayed that they might be made lepers. The Council of Orleans in 549, and that of Lyons in 588, decided that lepers ought to be kept at the expense of the Church, and under the care of the bishops. One reverend ecclesiastic went so far as to say that there were two kinds of leprosy—one pertaining to saints, martyrs, nuns, and friars, and the other to sinners.

It may have been owing to this semi-sacred character with which the disease was invested that the care of lepers became a fashionable fad with great people, just as we have seen slumming become in our own day. Bruno, Archbishop of Toul, afterwards Pope Leo IX, gave up his bed to a leper. Queen Blanche, of Castile, wife of Louis VIII and mother of St. Louis, lavished care upon lepers. Louis VIII himself and Henry III of England waited upon them and dressed their sores. The Empress Matilda, wife of Henry the Fowler, sold her bed to give to them. One cannot help thinking that she might have raised the money in some less ostentatious manner. St. Elizabeth, daughter of Andrew II, King of Hungary, and St. Cunegunda, Empress of Germany, nursed them assiduously; and Sybilla, Countess of Flanders, wife of the crusader Theodoric, stayed at Jerusalem to care for the lepers there in the hospital of St. John.

Whatever the original motive for the seclusion of lepers from the rest of the population, it is clear that at a very early time the belief in the contagiousness of the disease became very firmly established, and although the notion that lepers were in some way specially selected by the Almighty, either for good or for evil, never died out, and is traceable in many of the provisions made with respect to them, yet there is no doubt that most of these provisions were made with direct reference to the supposed contagiousness of the disease. This appears clearly

in the terrible ecclesiastical ceremony by which they were cut off from almost all communication with the rest of mankind, and from the many regulations by which they were prohibited from touching anything that was liable to be handled by healthy persons. To give here but one instance, the statutes of St. Julian's Hospital at St. Albans provide that no brother is to go into the bakehouse or brewhouse but he who has charge of them, and he not to touch anything, because persons under such a distemper are not to handle what is for the common use of man. The danger of contagion is explicitly stated in a writ of Edward IV directed to the Sheriff of Essex, which opens with these words—"Whereas we have heard that Johanna Nightingale is a leper and is commonly holding intercourse with the people of the aforesaid county, and mingles with them both in public and private places, and refuses to retire to a solitary place, to the grievous injury, *and on account of the contagion of the aforesaid disease*, the manifest peril of the aforesaid inhabitants," &c.

At Arles in very early times, probably in the fifth century, a law of the Senate enjoined the physicians to make every spring a census of the lepers, and to see that they were separated from the people; and we have seen that Ætius in the sixth century and Paulus Ægineta in the seventh record this custom in other places.

In 1278 a police regulation at Metz, made by the Thirteen, instituted special officers to seek in each parish for lepers, and provided that every one who, without sufficient excuse, escaped their investigations, should have an ear cut off. The regulation forbade any mezel, that is, any leper, to enter Metz, and condemned to a fine of 10 sols every citizen who gave alms to a leper, ordered the police to segregate the lepers, and, to stimulate their zeal, provided that any negligent policeman should be punished with the Xippe, which consisted in suspending the culprit over a cesspool by a rope and pulley, and dipping him in for as long as the magistrate thought fit.

In 1283 the Guildry of Berwick-on-Tweed enacted that no lipperman should enter the town, and if he did, he should be incontinent put forth by the town sergeant; and if a lipper uses commonly to come into the burgh, his clothes shall be burnt, and he shall be driven forth naked.

In Scotland, all men were forbidden to harbour lepers, and lepers were forbidden to enter a town except on Sundays, Wednesdays, and Fridays, from 10 till 2, and not then if there was a market on those days.

In 1346 Edward III sent to the mayor and sheriffs of London a command under the Great Seal to make proclamation in every ward in the city and liberties that every leper should avoid within fifteen days, and any one harbouring a leper in his house should forfeit the house and incur the king's further displeasure. The keepers of the gates of the city were sworn not to permit lepers to enter.

In the fourteenth and fifteenth centuries the doctors of Metz took oath between the hands of the master sheriff to make known every leper.

In 1439, the Dauphin Louis, subsequently Louis XI, sent commissioners from Toulouse to visit men, women, and children, sick or infected with leprosy, and to forbid them to mingle with others.

If lepers refused to go into retreat, they were very summarily dealt with. At Marseilles and some other places in France they were burnt alive.

The diagnosis of leprosy, especially in the early stages, is even now by no means easy, and in mediæval times must often have been doubtful and difficult. There is no doubt that some were sent to leper houses who suffered from other diseases, but it is impossible to read of the elaborate precautions taken in many places without recognising that extreme care was exercised. Galen gives a very full and correct description of the four kinds of leprosy, and it is to be remembered that Galen was regarded as an infallible authority, and certainly no one was admitted to the doctorate of medicine in any University who had not Galen at his finger-tips. Before his time Aretæus of Cappadocia, and after him Oribasius, gave descriptions of leprosy that are even now described as perfect. No doubt in remote places where there were no physicians, and where the diagnosis was on that account entrusted to episcopal or diocesan officials, or to confirmed lepers, who were expected to be experts in their own malady, mistakes were made; and Bernardus de Gordonio is very emphatic in saying that "it appears to me lepers are at the present day very injudiciously

adjudged." John of Gaddesden is equally emphatic. Still, it is remarkable how very few records there are of recoveries of lepers, and if mistakes had been frequent, we should have expected that recoveries would sometimes be recorded. As it is, I have been able to discover only two. In the archives of Toulouse there is a certificate, in the form of a letter by one Guy Patin to the Archbishop, certifying to the cure of a leper; and in the records of the Court at Nancy is an account of an action brought by one J. Blin, on his discharge from a leper-house after eight months residence.

In Lorraine, a suspected leper was examined by the emissaries of the bishop, often with one or two lepers as expert assessors. The blood was examined by three tests—grains of salt, vinegar, and the urine of a young boy. If declared healthy, the patient was furnished with letters of absolution, which were read out at divine service by the priest of his parish. If the case was doubtful, the patient was subjected to twenty-two successive investigations, and if still doubtful was sent to a leper house or leper settlement, and was there visited by physicians. If found leprous, he was *cum multis verbis bonis et consolatoriis sequestrandum a populo*.

At Cologne, in the twelfth century, a tribunal of three lepers was constituted to pronounce upon new comers to the leper settlement whether they were lepers or no. Suspected persons were kept under observation for a year. At a later date the diagnosis was entrusted to the medical faculty, and that suspected persons were not indiscriminately pronounced leprous is shown by the fact that of 174 examined only 10 were declared lepers.

Bernardus de Gordonio describes three groups of symptoms or stages of leprosy—occult or premonitory; infallible, characteristic of the established disease; and terminating. If the patient was in the occult stage he was not to be separated from mankind, but was to be strictly watched. No one, he says, ought to be adjudged leprous unless there appears manifestly a corruption of the figure, by which he means a deformity of the face. The disease would then be advanced.

Guy de Chauliac divides the symptoms into univocal and equivocal. The univocal signs are—(1) Rotundity of the eyes and ears; (2) thickening and tuberosity of the eyebrows,

with loss of their hair; (3) dilation and disfigurement of the nostrils externally, with constriction within; (4) nasal and raucous voice; (5) fœtor of the breath; (6) fixed and horrible satyr-like expression. De Chauliac advises that the patient is first to be consoled upon his unhappy lot, and then is to be sworn to tell the truth—first, as to the existence of leprosy in his family; second, as to his intercourse with lepers; and, third, whether his mind is clear and tranquil, and whether he feels punctures made by the examiner in his skin. The physician is then to feel his patient's pulse, to draw some blood and examine it by inspection and straining. Then he is to observe the patient's countenance, and to dismiss him with orders to bring a specimen of his urine next day—quite a modern admonition. On the following day he is to examine the urine, and then to look for the six univocal signs.

Bartholemy Glanville, who wrote in Latin about 1360, is thus translated by John Trevisa, vicar of Barkley (*De Proprietatibus Rerum*). He describes lepers as having “redde Whelkes and Pymples in the face, out of whome oftenne runne Blood and Matter: in such the Nose swollen and ben grete, the vertue of Smellynge faylyth, and the Brethe stynkyth ryghte fowle . . . unclene, spotyd, glemy, quytty, the Nosethrylles ben stopyt, the Wasen of the voys is rough and the voyse is horse, and the Heere falls.”

In the *Examen Leprosum*, published by Gesner, which appears to have been a sort of official guide, there are set forth between fifty and sixty signs that the examiner is to look for. He, also, advises that the patient should be sworn to answer truly.

In Rymer's *Fædera* appears a *Medicorum Regis supra morbo lepræ certificatio*, which is addressed—“To the most excellent and serene Prince and Lord in Christ, Edward [this was in 1468, and therefore refers to Edward IV], by the Grace of God King of England and France and Lord of Ireland, We, William Hattecliffe, Roger Marshall, and Dominus de Serego, Doctors of Arts and Medicine, your physicians, and sworn to watch over the health of your person, send due Reverence with Humility and Worship:—

“Whereas a petition was made to you in your Court of Chancery with regard to removing Johanna Nightingale of

Brentwoode in the County of Essex, *a communi hominum consortio*, because it was presumed by some of her neighbours that she was infected by the foul contact of Leprosy, and was in fact herself a Leper, upon which Your writ was then prepared, and afterwards directed to the Sheriff of the said County in these words"—here the writ is recited, parts of which have already been quoted. The return to the writ sets forth that "Whereas the Reverend Father in God, Robert, by the Grace of God Lord Bishop of Bath and Wells, Your Chancellor of England, consulted us on this subject, and determined to bring the said Johanna to us with the intention that . . . we should give information to Your Highness in your Chancery whether the said Johanna be in fact a leper or not, we therefore . . . have proceeded after this manner"—the return then sets forth how the physicians examined the said Johanna, first for the twenty-five better known (*famosiora*) signs of general leprosy, and then for upwards of fifty of the distinctive signs of the four varieties of leprosy—leonine, elephantine, alopecic, and ophidian—and found that she was utterly free and untainted. The documents are extremely interesting, as showing how careful and formal the examination of lepers was at that time, and how completely the method of secluding lepers was safeguarded by the forms of law. In this respect it compares not at all unfavourably with the methods of secluding lunatics at the present day.

When the diagnosis of leprosy was made, the leper was subjected to a gruesome ceremony adapted from that of taking the veil. Wrapped in a shroud, and placed on a bier, he was carried into the church, his family and friends following as in funeral procession. Arrived in the church, which was hung with black as for a funeral, the leper was laid upon the ground, covered with a pall, and a requiem mass was said. He was then carried to the churchyard and laid beside an open grave, where the priest scattered dust three times upon his head, saying, "Die to the world, be born again to God." Then, while the *Libera me*, the psalm for the dead, was chanted, the leper was conducted to his cabin, at the door of which the priest gave him his scrip for alms, his stoup for water, his wallet for scraps of food, his gloves, his cloak, and his clapper, and addressed him in these terms:—"While you are diseased you

will enter no house, no inn, no forge, no mill, nor in the common well or fountain will you drink or wash your clothes. You will not eat except by yourself or with other lepers. You will enter no church during service; you will mingle with no crowd. When you speak to any you will stand to leeward; when you beg for alms you will sound your clapper as a sign that you are forbidden to address anyone. You will not go out without your cloak; you will not drink but from your own fountain, nor will you draw water from any well or fountain but that which is before your door. You will always wear your gloves, and will touch no well-rope without them. You will touch no child, not even your own; and you will return to your cabin every night." In handing him the scrip the priest said:—"In this you will put the alms of the charitable, and you will remember to pray to God for your benefactors." The priest then planted a wooden cross before the door, fixed to it an alms box, and himself placed the first donation therein. The people followed his example, and then, after a prayer, the priest addressed the leper thus:—"My brother, through suffering much tribulation may you come to Paradise, where there is no sickness nor suffering, but all are pure and clean, resplendent like the sun. There you will go, if it please God. *Pax vobiscum.*"

The ceremony was no idle form. The unhappy leper upon whom it was pronounced was civilly dead. His will took effect at once. His property was divided amongst his legatees and heirs. He became incapable of inheriting or holding property. Even by the common law of England as late as Coke, lepers were classed with idiots, madmen, and outlaws, and a leper removed by writ, *de leproso amovendo*, could not even be a guardian in socage, whatever that may be.

The practice varied, however, from time to time, and in different places. Up to the eighth century, the fiction that the leper was dead was so rigorous and complete that he was not even allowed to receive the Eucharist, but Pope Gregory II early in the eighth century ordered that it was to be administered to them, and in 868 the Council of Worms confirmed this decree.

In view of the recent report of the Royal Commission in the Divorce Laws, and the discussion whether divorce should be

granted on the ground of inveterate insanity, and in view of the strenuous opposition offered to this proposal by the ecclesiastical element on the Commission, it is interesting to know that the Parliament of Compiègne, under Pepin le Bref in 757, allowed divorce on the ground of leprosy, and not only this, but allowed the healthy spouse to marry again. Pope Stephen II, in the middle of the eighth century, refused to sanction divorce on this ground. Among the laws of Hoel Dha, who died in the middle of the tenth century, is one enacting that a married woman whose husband became leprous was entitled to a divorce and to the restitution of her dowry. In the first half of the thirteenth century Pope Gregory IX, by a decretal, confirmed a less formal permission given by his predecessors Alexander III and Urban III, allowing lepers to marry. At Marseilles a leper could marry another leper, and at Lisieux lepers were allowed not only to marry but to have servants and to live a family life; but the general rule was that a leper was so civilly dead that his wife was a widow, and was free to marry again; and similarly if a woman became leprous her husband was divorced and could contract a new marriage. Lobineau in his history of Brittany says that there were in the city of Dol several husbands who had three wives living at the same time. In the case that I have alluded to as being on the records of the Court at Nancy, one J. Blin, discharged as cured after a residence of eight months in a leper house, brought an action for the recovery of his goods and his wife, but he was non-suited. In 1621, however, the jurisconsult Charondas gave it as his opinion that the duty of the healthy spouse was to nurse the other, if a leper; but if they were only affianced, and one of the parties became leprous, the espousal was nullified, and the marriage could not take place.

The exclusion of lepers from places of public resort was not always in all places complete. We have already seen that in Scotland they were allowed to enter towns on Sundays, Wednesdays, and Fridays, from 10 till 2, and at Toulouse they were allowed to go to market and to church in the early morning, before others were about. In France generally they were allowed to go into town on the great feasts of the church—Easter Day, Pentecost, Christmas, All Saints Day, the Assumption, and certain others.

Manifestly, it would be of little avail against contagion to send the leper to a leper house unless means were taken to keep him there. Accordingly, the leper who escaped was punished with a severity that varied much in different places. At St. Magdalen Hospital, Exeter, the punishment for going out of the house without the leave of the warden or his deputy was to be put in the stocks and to be restricted to bread and water for one day. At St. Julians Hospital, St. Albans, if any leper lay out all night he was to be expelled the house. At Greenside, in Scotland, the same offence was a hanging matter, and lest any leper should plead that he knew not, or had forgotten the penalty, the authorities thoughtfully set up a gibbet before the gate of the hospital to remind him.

In 1321 two lepers escaped from the leper house at Schenalle, in the valley of St. Dié. They were arrested and taken before Girardin, the provost of Ferry IV, Duke of Lorrain, and both condemned to be burnt alive. Not content with this, the provost ordered them first to be flogged. The Chapter of St. Dié was so outraged by this gross infringement of their privileges that they forthwith excommunicated the provost, not, it is to be remarked, for flogging and burning the wretched lepers, but for usurping the function of the Church. Duke Ferry acknowledged with humility the fault of his provost, and ordered him to deliver the lepers (who had already been flogged and burnt) to ecclesiastical justice. The difficulty that they had already been burnt was easily surmounted. Two dummies, representing the wretched lepers, were duly delivered to the Chapter, which tried them, condemned them, and delivered them to the secular arm that justice might be done. Duke Ferry accordingly burnt the lepers again in effigy, and so everyone was satisfied.

A leper, being civilly dead, could hold no property. At the leper house of Illeford the lepers actually took the monastic vows of poverty, chastity, and obedience, but this was not usual. Being outside the law, vow or no vow, he could hold no property. But this disability did not attach to the leper houses, or to the communities of lepers, some of which were by charter constituted bodies corporate, with a common seal, and the right to sue and be sued, and in this respect were on a par with the religious houses, with which the vow of poverty of the

individual members was no bar to the acquisition of enormous wealth by the community. Some of the leper houses became very rich, and this led on the one hand to horrible persecutions and on the other to great abuses.

In 1318 Philip the Tall, being short of money, cast a covetous eye upon the leper houses, some of which were become very wealthy. He therefore accused the lepers of having, at the instigation of the Jews, poisoned the wells in many towns of the realm, especially in Languedoc, by throwing into them a mixture of human blood and certain herbs, in order to engender the plague and enrich themselves by the public calamity. On this trumped up charge hundreds of unfortunate lepers were burnt alive, and the revenues and property of the leper houses confiscated. It is said that in this Philip the Tall merely followed the example of his father, Philip the Fair; but Philip the Fair, cruel and unscrupulous as he was, certainly was a benefactor of the leper house at Cheux, near Bayeux. In 1321 many lepers were burnt at Metz, and in the same century, following, no doubt, upon the infamous accusation of Philip, the populace despoiled the leper house at Verdun. In the fifteenth century in France many accusations were made against lepers of kidnapping children, poisoning springs and wells, and so forth, for which they were brought to the stake. It is to the honour of the Church that it discountenanced these barbarities, and Benedict XII actually excommunicated the perpetrators of the murders at Metz.

The abuses that crept into the administration of the leper houses were a consequence, not so much of their wealth as of the gradual diminution in the number of lepers and the disappearance of leprosy. In the early Middle Age the number of lepers in Europe, and the proportion of lepers to the healthy population, must have been very large. This appears no less from the character of the precautions taken against it, which I have described, than from the number of leper houses, and the number of persons in high places who suffered from the disease. It is significant also that in Anglo-Saxon the disease was called *seo mycle ail*—the great disease. How many leper houses there were altogether in Europe it is impossible to say. It is certain that their number has been absurdly exaggerated, but still it was surprisingly large. Ducange, by mistranslating

Matthew Paris, makes this historian assert that there were nineteen thousand leper houses in Europe. What he does say is perfectly clear. He is contrasting the possessions of the Knights Templars with the Knights Hospitallers, and he says—"Habent insuper Templarii in Christianitate novem milia Maneriorum; Hospitalarii vero novemdecem." Ducange quotes this—"Dominus Matthieu Paris affirmat suo tempore fuisse Leprosarias 1900 (19,000) in toto orbe Christiano." What he did say was that the Knights Hospitallers had nineteen thousand manors. Mezeray says that in the twelfth century there was neither town nor burgh in France that was not obliged to provide a hospital for lepers, but Mezeray did not write till the middle of the seventeenth century; Muratori, who wrote still later, but had better sources of information, says that in Italy "vix ulla erat civitas quæ non aliquem locum Leprosis destinatam haberet." What is more authentic is that when Louis VIII in 1226 made regulations for the leper houses in France, it was reckoned that they were two thousand in number. This is probably about correct, for in 1348 there were 43 in Paris and its neighbourhood, 219 in Normandy, and 59 in Lorraine, whereas in London in the twelfth century we know of but 6, and at the same time there were 6 in Norwich, 5 at Lyme Regis, and 20 in all Norfolk; and we do not know of more than about 220 in England and Scotland. It would appear, therefore, that leprosy was less prevalent in these countries than on the Continent. Moreover, as far as I can ascertain, there were few leper houses founded after the middle of the fourteenth century, and I connect this with the Black Death in 1348-49. It seems probable that a contagious plague would fall with especial severity upon those who were already sick, and would spread with especial rapidity and certainty among those who lived a communal life under one roof.

Another indication of the great prevalence of leprosy is to be found in the large numbers of persons in high positions who suffered from the disease. Such were Baldwin IV, King of Jerusalem (1135); Raoul, Count of Vermandois (1160); Thibaut VI, Count of Chartres (killed at the siege of Adrianople in 1205); Philip the Fair (1314); Robert Bruce (who died in the same year); and Queen Teresa of Aragon. Henry IV of England also is said to have been leprous.

Again, we find that besides the common leper hospitals, some were founded exclusively for certain classes. In Dauphiné there was one leper house for the commons, another for the nobles, and a third for ladies of the Court. The hospital at Walsingham was for lepers who were rich and of good family, and that of St. Lawrence at Canterbury for the clergy.

In this country leprosy seems to have reached its height in the second half of the twelfth century, for in that half century more leper hospitals were founded than in any other. After that time but few leper hospitals were founded here, and by the time of Edward III leprosy seems to have almost died out in England. In the fifteenth year of that monarch (1342) an inquisition was ordered by him into the affairs of the leper hospital at Ripon, and it was reported that no lepers coming to it, the funds had been applied to giving a dole to the poor. Six years later, the great leper hospital at St. Albans contained no more than three, and sometimes only two, lepers. In 1361 the Hospitals of St. John and St. Leonard at Aylesbury were gone to ruin. In 1364 it is reported of the Hospital of Romenall, in Kent, that through the iniquity of succeeding times, and no lepers being found that would live in it, it has been abandoned and run to ruin, whereupon John Fraunceys, desiring to restore the same, ordained that, instead of the lepers that used to dwell there, two priests should be maintained in it. About the same time the leper house at Lincoln contained only one leper. In 1457 it was ordered that St. Giles' Hospital for lepers without London, originally founded for lepers, should support three lepers of the King's house, "when there should be any such." At the visitation in the time of Henry VIII, the Hospital of St. Magdalen at Ripon contained only one leper. Illeford Hospital, in the time of Edward VI, was empty, and St. Bartholomew's at Chatham contained, in the time of Elizabeth, but two lepers. In 1616 the great leper house at Nancy contained but four lepers; in 1676, leprosy "having entirely disappeared from Normandy," the property of the leper house at Beaulieu was transferred to the Hotel Dieu at Caen, which still enjoys it; in 1678 Louis XIV directed that all the leper houses in France should be closed, with the exception of St. Mesmin at Orleans, which was to receive all

the lepers then remaining in the kingdom; and, in 1696, it was reported to him that leprosy had entirely disappeared from France.

The first leper house in France was founded at St. Ouen in the year 640, and without doubt the disease had been endemic in the country long before any such measure of isolation was taken against it, so that it is certain that this pest had existed in the country for more than 1,200 years; yet, at the end of that prodigious time, it died out without any new measure being adopted against it. Its duration in England was not so long, but here, also, it disappeared spontaneously after many centuries of virulence.

Why leprosy should thus have disappeared in Europe is a curious matter for speculation. It is certain that it was not exterminated by the isolation of lepers, for, in the first place, it is very doubtful whether leprosy is contagious at all, and, in the second, it is certain that the measures taken by our ancestors to prevent contagion were not effectual. The disease is of very slow progress, and the leper was not isolated until it was considerably advanced. There must always have been, therefore, plenty of lepers in the early stage of the disease going about among the community, and it is in the early stage that the contagion of most contagious diseases is most virulent. Moreover, if it was the isolation that put a stop to the disease, it would scarcely have taken twelve centuries to do so. Sir Jonathan Hutchinson was of opinion that leprosy was due to eating fish that was decomposed or imperfectly cured, and that it declined with the abolition of fast days at the Reformation; but the account I have given shows that it had nearly disappeared in this country before the Reformation, and on the Continent it disappeared as completely from countries that remained Catholic as from those that became Protestant. It is sometimes asserted that leprosy disappeared in consequence of the general amelioration of manners, and the adoption of greater cleanliness and better sanitation, but I know of no evidence that the manners of our ancestors in respect of cleanliness and sanitation were any better in the fifteenth and sixteenth centuries than in the eleventh and twelfth, nor that any improvement in this respect set in earlier in this country than in France. In view of the difficulty of communicating the

disease by inoculation, the surmise has crossed my mind whether the spread of the disease may not have been due to inoculation by some biting insect, in whose body the bacillus underwent some change which prepared it for invading human tissue; and whether the cessation of the disease may not have been due to the gradual extinction of this insect from one of the many causes that secure the extinction of species. The surmise is plausible, but evidence is wholly wanting, and it must remain a mere surmise. There is, however, another hypothesis for which there is a good deal of corroborative evidence, and which deserves, therefore, some attention. The clinical descriptions of disease that we find in ancient and mediæval writers on medicine were so clear and so faithful that we have no difficulty in recognising in them diseases that still occur in our daily practice. In particular, the descriptions of leprosy given by Aretæus in the first century, and by Oribasius in the fourth, have been characterised by a recent writer as perfect. Now, the one disease that could not be omitted at the present day from any book on medicine, however brief, popular, superficial, or condensed, is pulmonary consumption and other manifestations of tuberculosis; and it is remarkable that, although there are in ancient and mediæval writers descriptions of disease that we may, with some hesitation, identify with phthisis, yet there is nothing in these writers to make us believe that phthisis was the prevalent scourge of mankind in Europe that we find it now. If the ancient and mediæval physicians had been asked what disease was the greatest scourge of mankind in Europe in their day, they would have undoubtedly answered, next to the plague, leprosy. Any modern physician to whom the same question was put would undoubtedly answer, tuberculosis. It seems, then, to be a fact that tuberculosis has replaced leprosy in this respect. Is there any reason to suppose that the change is more than the mere supersession of one disease by another? I think there is. It seems to me there are several. The bacillus of tuberculosis is closely alike, and closely allied to the bacillus of leprosy. Every one admits that. The disease of tuberculosis resembles the disease of leprosy in many respects. They are both diseases usually of very slow progress, extremely destructive of tissue, and but little, or not at all, affected by remedies.

Tuberculosis has been supposed to be hereditary; leprosy has been supposed to be hereditary. An hereditary susceptibility is without doubt an important factor in both diseases; and they are the only microbic diseases to which such a factor has ever been supposed to contribute. It is well-known that there are several strains of the tubercular bacillus—the bovine strain, the human strain, the strain of lupus—which have special proclivities, and attack severally different parts of the body. So there are several strains of the leprous bacillus, which have special proclivities for special parts of the body, and so produce tubercular leprosy, anæsthetic leprosy, and so forth. Lastly, it is, I think, extremely significant that the tubercular bacillus that produces lupus attacks the same region, the face, as one of the strains of the leprous bacillus, and produces very similar disfigurement. On these data I venture to put forward the hypothesis that the bacillus of leprosy has changed in the course of time into the tubercular bacillus, that leprosy has disappeared in one form only to reappear in another. That strains of micro-organisms do undergo modifications in virulence and other qualities is indisputable, for the whole practice of vaccination is founded on the change. The bacillus of leprosy and the bacillus of tuberculosis are so closely allied that, if we hold at all the theory of evolution, we must presume either that they own a common descent from some progenitor or that the one is evolved out of the other. But there is no disease, unless, indeed, it be lupus, that can by any stretch of imagination be regarded as due to a bacillus the common ancestor of the leprous and the tubercular bacillus; and the spontaneous disappearance of leprosy with the simultaneous increase in prevalence of tuberculosis seem to indicate the gradual development of the one out of the other.

Thus the ancient leper house has not only its modern representative, but also its lineal descendant, in the modern sanatorium for consumption. In mediæval times, every city and every burgh had its leper house. For all the triumphs of modern progress, modern science, modern sanitation, and modern care of the sick, we are still far behind our ancestors of six and seven hundred years ago in the provision of homes for the victims of the great scourge of Christendom.

REJECTIONS AMONG RECRUITS: SOME
STATISTICS.

BY JOHN FERGUS, M.A., M.D.

ALONG with Drs. W. S. Paterson, Miller Semple, M'Walter, and Lothian, the writer was attached from the middle of August till the end of September last to the Army Recruiting Office at West Nile Street, where, during the rush of recruits to join Lord Kitchener's army at the beginning of the war, about 3,250 recruits passed through our hands. Statistics of the exact number of men examined and of the exact numbers rejected as unfit are not available, but it may be of some interest to consider the various causes of rejection among 348 recruits whose papers happened to be available for analysis. This, of course, is only a small proportion of the total number rejected, which probably amounted to about 25 per cent (or even more) of the total number examined; but, from various causes, only 348 "unfit" papers were available for analysis, the results being embodied in the subjoined table.

It may be noted that the standards varied not only—as they always do—with the various branches of the service, but also, in some cases, from day to day, according to the state of recruiting, and according to whether certain units were urgently in need of men or the reverse. Thus a chest measure of 33 inches might at one time pass a man, while at another time a measure of 35 inches might be requisite; and similarly with height, the standard of which varied from time to time, and was ultimately raised to 5 feet 6 inches, so that it is impossible to give the percentages of men rejected for not conforming to certain fixed and unvarying standards. Further, the standards thus fixed from time to time, were in themselves to a certain degree elastic in that, in the case of a young recruit failing to conform to some one standard, some allowance could be made for the possibility of his being likely ultimately to develop to

the requisite standard whether of height, weight, or chest-measurement. Many of the recruits examined were young fellows scarcely out of their teens, a considerable proportion of whom, in civilian life, had been employed in sedentary occupations, and in whom the training for the army was likely quickly to develop a physique up to the standard required. We were thus permitted to exercise a certain amount of discretion as to those whom we might consider unfit for failing to conform to some one standard, and therefore those who are detailed in the table as "unfit" for height, weight, or chest-measurement may be considered as being permanently unfit in one or other of these respects, and as never likely to attain the prescribed standard.

Being civilian surgeons—some of us, however, retired Volunteer or Territorial surgeons—we had had little if any previous experience in examining recruits under conditions of actual warfare, but we attempted to the best of our ability to make our examinations on the lines of the "Rules for the Inspection of Recruits," as laid down in the Regulations for Army Medical Services, though owing to the large numbers examined—sometimes over 300 a day—and the amount of clerical work involved, our examinations may not have been in every instance as stringent as examinations carried out by regular officers of the R.A.M.C. in times of peace and under normal conditions of recruiting; but on the whole we did our best to make our examinations tolerably thorough, and to give full consideration to the various "grounds of rejection" as detailed in the Army Medical Service Manual.

Our method of examination was generally as follows:—The sight and teeth were first investigated before the recruit was undressed, the vision being tested by means of Snellen's test types, the letters having to be read with each eye separately, while the test cards were frequently changed to prevent recruits awaiting examination from memorising the letters and thus deceiving us. The results were recorded in fractions of full vision. For illiterates, of whom a few presented themselves, a special test card was used. The eye test was at first very stringent, which may in part account for the large number of rejections for defective vision, but ultimately it was reduced to

a very easy standard, and more especially in the case of old N.C.Os. applying for posts as instructors to newly raised troops. The teeth were next examined, special attention being directed to the relative position in the jaws of lost or inefficient teeth, while it was an essential condition that there should be tolerable efficiency of opposing molars. The general nutrition and robustness of the recruit were taken into consideration in deciding the question of rejection on account of the teeth.

If the recruit passed for vision and teeth he was then made to strip entirely nude, and was then weighed, his height was taken, the maximum chest measure and the expansion of the chest recorded; his vaccination marks, any identifying marks such as scars or tattoo marks were noted, his physical development was recorded, while a careful examination was made for hernia, varicose veins, varicocele, piles, fistula, cutaneous affections, parasites, venereal disease, or amputations or deformities of any of the limbs or digits—flat-foot and hammer-toe coming under the latter category. The heart and lungs were examined and the pulse-rate noted, and subsequently the recruit was put through a variety of movements to test the power of motion of the various limbs and also of the trunk. He was also asked various questions as to any previous illnesses or liability to disease, and from the manner in which he answered those questions we were able to some extent to deduce his general intelligence and the range of his mental capacities. These questions also gave us an indication if any deafness was present; if present, the hearing was tested by the watch, and the hearing distance measured.

As there were always two or more of us on duty at the same time in the recruiting office, it was thus always possible for any of us to obtain a second opinion from one of our colleagues in any case which seemed on the border-line between rejection and acceptance—*e.g.*, the degree of varicosity that might be passed, the efficiency of the teeth, slight deformities of the feet, &c.—so that no man was arbitrarily rejected for some doubtful defect without his case being fully considered.

TABLE OF CAUSES OF REJECTION.

Defective eyesight, . . .	95	General malnutrition, . . .	3
Defective height, . . .	57	Disease of lungs (active), . .	2
Defective weight, . . .	38	Active disease of glands, . .	1
Defective chest-measure, . .	36	Piles,	1
Inefficient teeth, . . .	33	Weakness of mind, . . .	1
Varicose veins, } . . .	15	Yielding abdominal operation	
Varicocoele, } . . .	6	scar,	1
Cardiac disease, . . .	11	Partial ankylosis, . . .	1
Hernia,	10	Acute venereal disease, . .	1
Deformities and amputations, .	9	Unclassified (papers only	
Cutaneous affections, . . .	6	marked "unfit"), . . .	12
Orchitis or enlarged testicle, .	5		
Otorrhœa,	3	Total,	348
Deafness without otorrhœa, .	1		

Referring, then, to the above table—which it must be remembered is compiled only from "unfit" papers which happened to be preserved, and not from the total number of rejections—it will be observed that defective eyesight accounts for by far the largest proportion of rejections. This is in part accounted for by the stringency of the vision test in the earlier days of recruiting, when $V = \frac{6}{6}$ was requisite in at least one eye, but it probably also represents a considerable actual deficiency of visual powers in the class of men presenting themselves for examination, many of whom were of the well-educated class and accustomed to put a considerable strain on their eyes by clerical work both in writing and in figuring, and to whom in many instances it was a new discovery that their eyesight was defective. We found that recruits drawn from rural avocations—farmers, ploughmen, and other outdoor workers—showed, as a rule, much better eyesight than their urban brethren. It was noted that rejections for eyesight were much more common on Saturday afternoons and evenings than on other days. The reason for this is, of course, the habit, unfortunately common in some classes, of indulging pretty freely in alcohol on the Saturday afternoon and evening. We found marked interference with the powers of reading the test-types even in those who were not obviously under the influence of

alcohol, while to those who had been indulging freely the old Scotch expression "blin fou" might be well applied, as several of them were so "overcome" that they could not read the types at all. It is a commentary on the appropriateness of Lord Kitchener's plea for a temperate army that an amount of alcohol which did not apparently affect a man's conduct or general capacities, yet materially impaired his efficiency as a soldier by deteriorating his acuteness of vision. The importance of good vision for the telling individual rifle firing which has been such a prominent feature on the part of our troops during the war need hardly be insisted on.

Deficient height was the next most frequent cause of rejection, and was rather a sore subject with the examinees and, to some extent, with the examiners also. Many a well set up and otherwise efficient little man lacking the requisite inches was both disappointed and angry when told that his Zaccheus-like stature prevented him from serving his country, and like another well-known character in scripture he often "went away in a rage," casting opprobrious epithets on the doctors and on the system which had been so offensively foolish as to reject, for a mere question of inches, one so willing and so eminently well fitted as he to "fecht the (sanguinary) Germans." We were often sorry to have to reject sturdy and well-developed men under the standard height, especially when one remembers what efficient service can be given by small men such as the Ghurkas, but we had to adhere to the regulations and to the standards current at the time of examination. When, owing to the difficulty of dealing with the abnormal numbers of new men, and of providing them with equipment, the standard of height was raised to 5 feet 6 inches, our work at the recruiting office became practically negligible. The raising of the standard undoubtedly put a damper on recruiting, which the subsequent lowering of it failed entirely to counteract.

Defective weight and defective chest measurement each accounted for practically the same number of rejections, viz., 38 and 36 respectively. Naturally, defective weight was more common among the younger and not fully developed recruits, but defective chest measurement was by no means limited only to the younger recruits, but was found at all ages. In some

cases, of course, the chest measure was not absolutely defective, but was so relatively to the height of the recruit. Thus, a recruit of say, 5 feet 10 inches, might be rejected even though his chest measure was up to or even above the standard fixed for a shorter man. Rejections on account of deficient expansion of the chest were comparatively rare, with a range of expansion of only 2 inches as the standard; but, as might be expected, they were more common the older the recruit, and consequently the less mobile his chest walls. As a point of some interest it was noted that defects of expansion were most common among old soldiers, whose puffed-out military-looking chests were often found capable of a surprisingly small range of expansion. This is probably accounted for by the stiff attitude formerly assumed at drill with the chest thrown out and the abdomen drawn in, which must tend to make for a thoracic rather than an abdominal type of breathing, and thus in time to produce some degree of emphysema. With the free exercises now so much used in the modern training of troops these defects of expansion should tend to disappear.

Defective teeth, on account of which there were 33 rejections, were perhaps an even more fertile source of dissatisfaction to the recruit, and of hostile argumentativeness on his part than was the standard for height. It was an interesting study in comparative values to note what some of the men considered good teeth. A few dubious tusks would be described to us as "a grand set," while of teeth almost dropping out of their sockets from pyorrhœa we would be proudly told that they could "chew anything I'm likely to get." Men expressed surprise and indignation when told that they must be rejected for having no teeth at all in one or other jaw, and were absolutely hurt when informed that a tough but toothless gum was not considered an ideally efficient masticatory apparatus. *Punch's* joke about soldiers being wanted to fight, and not to bite, the Germans was fired off at us with a regularity that was only equalled by the recruit's belief in its absolute novelty and exceeding brilliance. Some of the older soldiers rejoining the colours had shockingly bad teeth, but almost invariably advanced the plea that "these are the same teeth I went through the South African war with, sir," a statement which we usually took *cum grano*.

Varicose veins in the legs accounted for 15 rejections, and varicocele for 6. The degrees of varicosity varied considerably, but in those rejected on this account the varicosity was, of course, sufficiently well-marked to prevent the recruit from ever being an efficient soldier. In rejecting for varicose veins we took into consideration the question as to whether a man was going into a kilted regiment or into one where puttees would be worn. The support likely to be afforded by well-applied puttees sometimes decided a doubtful case in the man's favour. Varicocele was exceedingly common, probably about 20 per cent (or more) of the men presenting some degree of this condition, but it was only the more marked cases where the condition was likely to impair the man's usefulness that were rejected. In one case, in addition to marked general varicosity of both legs and also a varicocele, there was an unusual condition of extraordinary varicosity on the penis, the veins of which, tortuous to a degree, were as large as a thin pencil.

Cardiac disease accounted for 11 rejections. Possibly there might have been a greater number had more favourable conditions existed for a thorough examination of the heart, but with several medical officers calling out at the same time details of their examinations to the senior Boy Scouts, who were so invaluable as clerks, and with a typewriting machine working at high pressure on the other side of a thin screen, it was, on the whole, no easy matter to detect anything but the more pronounced and more easily recognised lesions. A considerable proportion of those lesions—mitral and aortic murmurs—were found in old soldiers; but, so far as recollection serves, there was no case of aneurysm or suspected aneurysm. In some of the younger recruits a pre-systolic murmur at the apex was the cause of rejection.

Hernia was the cause of rejection in 10 cases. In most of these cases the condition was, of course, slight, and had often not been previously noticed by the man himself owing to the hernia not having descended further than the inguinal canal. Hernia is so well known, even to the layman, as a cause of disqualification for many kinds of occupations that we had practically no men suffering from really large pronounced herniæ presenting themselves for examination, though we

had at least one amusing instance to the contrary. A man, on being told to go into the dressing-room to strip, asked if he was to take off all his clothes, and on being answered in the affirmative his next query was "Will I even hae to tak' aff my rupture belt?"! In cases where there was difficulty the man was examined in the prone as well as in the erect position, when the "slip and gurgle" of the mass receding before the examining fingers often established the diagnosis.

In this connection it may be noted that we had a considerable number of cases of undescended testicle, though they do not happen to fall among the papers examined for the above table. The misplaced organ was in several instances found in the inguinal canal, and when found in that position entailed the rejection of the recruit, as an organ thus situated would be much more liable to injury and to injurious pressure in marching than when in its normal place. In one case we had what looked at first sight like a supernumerary testicle, but which was probably an encysted hydrocele. In this case, as in cases of undescended testicle where the misplaced organ was apparently in the abdomen and the scrotum empty on one side, we thought it well to reject on what one may call æsthetic grounds, as soldiers with such abnormalities of the genital organs are said to be peculiarly liable to become objects of derision to their comrades of the barrack-room who are the fortunate possessors of normal genitalia.

Enlarged testicles (apart from varicocele) accounted for 5 rejections. Most of those were probably cases of chronic orchitis, but one case at least was considered by those of us who saw it as definitely malignant. Overt evidence of existing active venereal disease was not present in those cases. Reference to the table will show that only one man out of 348 tabulated was rejected on account of venereal disease obviously present; this was a small chancre on the anterior aspect of the penis, close to the frænum, and almost hidden in the sulcus round the glans penis. That only one man was found to be suffering from active venereal disease may seem surprising, but it may be explained in various ways. One explanation—obviously the most flattering—is that venereal disease is uncommon in Scotland, and especially so in Glasgow, and that sexual morality, whether natural or acquired through the

efforts of a highly moral and conscientious magistracy, aided by an intelligent and discriminating police force, is at an extremely high level in this city and neighbourhood. Such an explanation, though flattering, is probably largely erroneous. Active venereal disease is so well known to the man in the street as a bar to military service, as also to many forms of civil employment, and, moreover, is a form of disability so easily detected, as a rule, by a medical examiner, that a more probable explanation of the small number of rejections from this cause is that men who knew themselves to be suffering from venereal disease refrained from presenting themselves for examination. It may also be noted in this connection that some of the rejections classified under "diseases of the skin" were to the best of our judgment rashes arising from specific disease.

Deformities and amputations, or loss of digits or phalanges, were responsible for 9 rejections. It is obvious that loss of finger-joints, either by amputation or by accident, will seriously impair a man's usefulness as a soldier, especially in the handling of a rifle, and notably so if the loss is in the right hand, while similar defects of the phalanges of the toes may render him useless for marching. Amputations, or loss of fingers or parts of them by accident were, as was to be expected in an industrial community, more common than similar conditions of the toes. It was otherwise, however, with deformities, where the feet were more frequently found to be the offenders than the hands. Deformities or disabilities of the feet are necessarily of the first importance in forming a judgment as to whether a man is likely to make an efficient soldier or not, for though the dictum that "an army marches on its stomach" is essentially true, it is no less true that the actual mechanism of marching is performed by the feet, whatever be the state of the stomach as regards repletion or emptiness. The disabilities of the feet most likely to prevent a soldier from being an efficient marcher are flat-foot, hammer-toe, bunions, hallux valgus, and corns, while ingrowing toe-nail is also a possible cause of disability. With our lack of experience of the conditions of active service in time of war, it was sometimes rather difficult for us to determine what degree of any of those conditions should be allowed to pass, and this was perhaps especially the case as

regards flat-foot, though when of slight degree we usually disregarded it.

Captain Webb-Johnson, R.A.M.C.(T.), in an interesting and very practical article on "The Soldiers' Feet and Foot-gear" in the *British Medical Journal* of 31st October last, states that some medical officers reject all cases of flat-foot, but, in his opinion, this is too drastic a course. He instances the case of a quartermaster, personally known to him, who, after being rejected twenty-nine years ago for one regiment on account of flat-foot, was accepted the next day by another regiment, and had had no trouble whatever with his feet during his many years of service. As Captain Webb-Johnson points out, the healthy outdoor life of the soldier, coupled with the physical exercises and marches, tends to tone up the muscles which support the arch of the foot, the falling down of the arch being the principal factor in flat-foot. In the walk of a flat-footed person the toes are turned out, the heel does not properly leave the ground, and thus elasticity in walking tends to disappear. The same writer also states that he makes it his practice to reject a man with flat-foot if he is quite unable to raise himself on his toes and restore the arch by the muscles of the calf. This was a test which we invariably carried out on all the men examined, with the addition of making them spring into the air from the toes and come down again on the toes without the heels touching the ground. If they came down on their heels, and could not support themselves on their toes, we considered it evidence that the arch of the foot was defective. Similarly, hopping round the room on the toes brought out any defects in the supporting power of the arch of the foot.

Hammer-toe, if at all pronounced, also ensured rejection, as, in addition to the deformity itself, severe corns are apt to develop on the top of the abnormally flexed proximal phalangeal joint, and also at the tip of the toe where it presses downward on the boot. There were also some rejections for acute bunion, which was usually associated with some degree of hallux valgus.

Glasgow usually gets the credit of having an undue proportion of children suffering from deformities due to rickets, and it might have been expected that there would be several rejections

from such deformities in the adult subjects we examined, but, as a matter of fact, such cases were infrequent. We had, it is true, several cases of slight bow-legs and knock-knee, but they were seldom so marked as to impair to any notable degree the man's usefulness as a soldier.

Of rejections for cutaneous diseases only 6 happen to fall within the scope of the above table, but over all we had a considerable number of rejections for affections of the skin. Parasitic affections, as might be expected, were tolerably common—notably, scabies and pediculi pubis—but had the lesions due to the active and (to the medical officers at least) the unpleasantly common *pulex irritans* been reckoned as a disqualifying cause, then the rejections would have been enormously increased. To paraphrase the celebrated *Scarlet Pimpernel*—

“We saw it here, we saw it there,
(A thing we rather wouldn't see),
It leaped on earth, it leaped in air,
The demned elusive jumping flea.”

We had a fair number of cases of psoriasis, some so slight as hardly to call for notice, but others sufficiently extensive and acute to entail rejection, while acute eczema also contributed its quota. Syphilitic affections of the skin also accounted for some rejections.

Otorrhœa was the cause of 3 rejections. We made it a rule—in our opinion a safe one—to reject all men suffering from a discharge from the ear. Such cases, however, were comparatively uncommon, as was also deafness apart from otorrhœa.

In 2 cases the symptoms and the history led to a diagnosis of phthisis, and though such a diagnosis, without a bacteriological examination, was more or less arbitrary, it was probably justified by the chest symptoms alone.

To the credit of modern surgery be it said that, though an appreciable proportion of the men showed scars following on operations for appendicitis and other abdominal conditions, as well as for the radical cure for hernia, there were very few rejections on account of weakness or yielding of the scars or the presence of a ventral hernia. In the one case mentioned in the table the operation had been recent, and the scar was an

extensive one which showed a suspicious bulging though not perhaps an actual hernia. Though not noted in the above table, there were one or two rejections for scars following on operations for empyema. In those cases there was deformity of the chest wall, and a concomitant interference with respiratory capacity.

Though not included in the table, there were some rejections for more unusual conditions. One case strongly suggested Thomsen's disease, another had symptoms suggesting an incipient general paralysis, while in another disseminated sclerosis was suspected.

At first, in the earlier days of recruiting, the men coming up for examination tended to be of the chronic out-of-work type, who might in any case have gravitated into the army, but as the call for men became more urgent the class of men improved, and we had many fine specimens of robust and intelligent young manhood willing to do and die for their country.

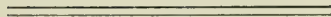
The work had its humours as well as its pathos, and was an interesting study in personalities and temperaments.

Tattoo marks, which were naturally more common and more elaborate in old soldiers than in others, might have afforded of themselves an interesting subject for a dissertation. They were of the most various designs, and expressed the most varied sentiments, and some of the men were veritable picture galleries. Tombstones—generally inscribed "to my mother"—were very common. Loyalty was expressed by portraits of Queen Victoria, King Edward, and King George; the softer passions found frequent vent in representations of young ladies, apparently frequently of the ballet, if one might judge by the scantiness of their costumes and the close fit of their "tights"; the martial spirit sought expression in pictures of Lord Kitchener, "Bobs," and other idols of the soldier; while patriotism had its sentiments expressed by elaborate designs in which the Union Jack appropriately occupied the principal place. We had floral designs that would have shamed a flower-show; the British bull dog and the British lion glared with equal defiance from brawny arms; sinister and sinuous snakes, dragons weirder than Sir John Mandeville's "cocodrills" shot

baleful glances at us from their fiery eyes, while soldiers and sailors innumerable, immaculately attired according to their rank, sustained our courage with crossed swords or anchors as the emblems of their courage and steadfastness.

In conclusion, one may say that our lack of experience of the conditions obtaining in actual warfare may have led us to pass men whom perhaps we should have rejected, and *vice versa* ; but if we lacked experience we were not lacking in goodwill towards the men and towards the army, nor in good wishes for the success in this titanic war of our truly splendid troops, who have so worthily maintained and even heightened the glorious traditions of their ancestors, handed down as a noble and imperishable heritage from the hard-fought fields of Waterloo, Quatre Bras, or Balaclava.

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THE NEW *B. P.*: SOME NOTES FOR THE USE OF PRESCRIBERS.

A NEW edition of the *British Pharmacopœia* comes into force on 1st January, 1915, and many changes from the previous edition appear. Advance copies have been available for consultation for some time, and various synopses of the changes have been published from time to time. It is hoped that the following notes and tables may be found of service by our readers.

It is noteworthy that the articles omitted number nearly four times as many as the new ones introduced, and that the latter number only forty-three.

Doses are given first in the metric system, and then by imperial system. The *scruple* is not mentioned, and it is recommended that, to prevent misreading, the symbol \mathfrak{z} used for 60 grains and for 1 fluid drachm, and symbol \mathfrak{z} used sometimes for 480 grains, sometimes for 437·5 grains (1 ounce), and sometimes for 1 fluid ounce, be no longer employed. It is pointed out that the doses given are merely intended for guidance, and that when the dose prescribed appears unduly large it is the duty of the pharmacist or dispenser to satisfy himself that the prescriber's intention has been correctly interpreted.

All formulæ for galenicals and compound medicines are given in metric measure exclusively. Pharmacists will find it difficult to be in possession of sets of verified metric weights and measures by 1st January, but by taking equivalent formulæ in imperial measure the older apparatus in use at present will be available, and, no doubt, will be employed for some time to come.

NOTABLE ALTERATIONS IN POTENCY.

I.—STRONGER.

<i>For internal use—</i>	Dose.	Comparison with 1898 <i>B. P.</i>
*Tinct. strophanth,	2 to 5 minims,	now four times stronger.
Tinct. aconiti, .	2 to 5 „	„ twice as strong.
Acetum scillæ, .	5 to 15 „	„ „
Acetum urginææ, .	5 to 15 „	„ „
Spt. Juniperi, .	5 to 20 „	„ „

For internal use—

	Dose.	Comparison with 1898 <i>B.P.</i>
†Tinct. Opii,	{ 5 to 15 min. (repeated) now 20 to 30 „ (single) „	{ increased by one-third, and contains 1 per cent morphine.
Tinct. camph. co.,	$\frac{1}{2}$ to 1 fl. drachm, „	increased by 10 per cent.
Syrup. chloral, .	$\frac{1}{2}$ to 1 „ „	increased by 9 per cent, now 10·9 grains in 1 fl. drachm.
Syrup. codein. phosph.,	$\frac{1}{2}$ to 1 „ „	increased by 9 per cent, now 0·27 grains in 1 fl. drachm.

For external use—

Ung. hydrarg. subchlor., now twice as strong.

Ung. opii, increased by one-third.

N.B.—* The very great increase in strength of tinct. strophanth.

† Tinct. opii now comes under Part I of the poison schedule, and all sales of it must be noted in the register of poisons.

II.—WEAKER.

	Dose.	Comparison with 1898 <i>B. P.</i> Now decreased by percentage.	New proportion of active ingredient.
<i>For internal use—</i>			
Tinct. nucis vomicæ,	5 to 15 minims.	50 =	0·125 per cent.
Tinct. colchici, . . .	5 to 15 „	50	...
Inject. cocain. hypoderm., .	5 to 10 „	50 =	5·0 per cent.
Inject. morphin. hypoderm.,	5 to 10 „	50 =	2·5 „
Pil. phosphori, . . .	1 to 4 grains.	50 =	1·0 „
Trochis. acid. carbolici,	. . . . .	50 =	$\frac{1}{2}$ grain in each.
Acid. nitric dil., . . .	5 to 20 minims.	42·7 =	10·0 per cent.
Tinct. belladon., . . .	5 to 15 minims.	30 =	0·035 „
Syrup. ferri iodidi, . . .	$\frac{1}{2}$ to 1 fl. drm.	30	...
*Acid. phosph. dil., . . .	5 to 20 minims.	27·5 =	10·0 per cent.
*Acid. sulph. dil.	5 to 20 „	26·7 =	10·0 „
Tabel. trinitrini, . . .	1 to 2 tablets.	23 =	$\frac{1}{130}$ grain in each.
Liquor potassæ, . . .	10 to 30 minims.	19·2 =	5·0 per cent.
Liquor hydrarg. perchlor.,	$\frac{1}{2}$ to 1 fl. drm.	12·3 =	1 in 1,000.
Tinct. opii ammon., . . .	$\frac{1}{2}$ to 1 „	10	...

For external use—

Emplast. belladon.,	50 =	0·25 per cent.
Ung. hydrarg. ammon.,	50	...
Lin. hydrargyri,	40	...
Ung. hydrargyri,	38	...
Ung. hydrarg. co,	38	...
Ung. acid. carbolici,	25 =	3·0 per cent.

* All the dilute acids except hydrocyanic and nitro-hydrochloric now contain • 10 per cent of the respective acids.

NOTABLE CHANGES IN NAME.

Old Name, 1898.	New Name, 1914.
Acet. cantharidis, . . .	Acet. cantharidini.
Emplast. cantharidis, . . .	Emplast. cantharidini.
Ext. aloes barb., . . .	Ext. aloes.
Ext. belladon. alc., . . .	Ext. belladon. siccum.
Ext. cascar. sagrad., . . .	Ext. cascar. sagrad. siccum.
Ext. euonymi sic., . . .	Ext. euonymi.
Ext. hyoseyami virid., . . .	Ext. hyoseyami.
Ext. nucis vomicæ, . . .	Ext. nucis vomicæ siccum.
Ext. opii, . . .	Ext. opii siccum.
Ferrum tartaratum, . . .	Ferri et potassii tartras.
Ferri phosphas, . . .	Ferri phosphas saccharatus (slightly stronger).
Hydrargyri oleas, . . .	Hydrargyrum oleatum.
Liq. iodi fort., . . .	Tinct. iodi fort.
Liq. magnes. carb., . . .	Liq. magnes. bicarb.
Oleum gynocardiaë, . . .	Oleum chaulmoogræ.
Oleum pini, . . .	Oleum abietis.
Pil. aloes barb., } . . .	Pil. aloes.
Pil. aloes socot., } . . .	
Syrup. codein., . . .	Syrup. codein. phosph.
Tinct. colchici sem., . . .	Tinct. colchici.
Tinct. iodi, . . .	Tinct. iodi mitis.
Troch. eucalypti gummi, . . .	Troch. kino eucalypt.
Ung. cantharidis, . . .	Ung. cantharidini.
Ung. glycerin. plumb. subacet.,	Ung. plumb. subacet.
Ung. gynocardiaë, . . .	Ung. chaulmoogræ.

Barbadoes and socotrine aloes are included in the name "Aloes."

Alum and borax have "purificatum" added after.

Turpentine has "rectificatum" added.

SOME DRUGS NEWLY ADDED.

Acetonum, used as a solvent of cantharidin.

Acidum acetylsalicylicum = "aspirin," &c.

Acidum hydriodicum dilutum = 10 per cent of hydriodic acid.

— syrup. acid. hydriodic., contains 10 per cent of the dilute acid.

Acidum picricum, purity not less than 99 per cent.

Adrenalum = active principle of suprarenal glands.

— liq. adrenalini hydrochlor = 1 in 1,000 in normal saline with $\frac{1}{2}$ per cent CHCl_3 .

SOME DRUGS NEWLY ADDED (*continued*).

Barbitonum = malourea B.P.C. = "veronal," &c.

Benzaminæ lactas = betacaine B.P.C. = beta-eucaine.

Calcii lactas.

Cantharidinum = active principle of cantharides, which it replaces.

Chloral formamidum = chloral-amide.

Cresol.

— liq. cresol saponatus = a soluble preparation containing 50 per cent cresol.

Diamorphinæ hydrochloridum = acetomorph. hydroch. B.P.C. = heroin hydroch.

Ethyl chloridum, purity not less than 99.5 per cent.

Glucosum = glucose = syrupy commercial product.

Guaiacol = colourless liquid, from creosote or synthetic.

Guaiacol carbonas = solid.

Hexamina = formamina B.P.C. = hexamethylenetetramine.

Injectio strychninæ hypodermica, contains $\frac{3}{4}$ per cent of the hydrochloride.

Liquor formaldehydi = 36 to 38 per cent solution.

— liq. formaldehydi saponatus, contains 20 per cent of the solution of formaldehyde with 40 per cent soft soap, 30 per cent alcohol (90 per cent), and water.

Methyl salicylas = oil of gaultheria natural or artificial, purity not less than 98 per cent.

Methyl sulphonal = "trional."

Pelletierinæ tannas = a mixture of the tannates of the alkaloids of pomegranate bark.

Phenolphthaleinum = "purgen," "laxoin," &c.

Resorcinum.

Sennæ fructus = senna pods.

Sevum benzoatum = benzoated suet, for use in warm climates in place of benzoated lard.

Sodii phosphas acidus = acid phosphate of soda.

Strontii bromidum.

Theobrominæ et sodii salicylas = "diuretin."

Unguentum lanæ compositum = compound wool fat ointment, a mixture of wool fat, hard and soft paraffins, and beeswax.

The only glandular substances included are pepsin, pancreatic solution, dry thyroid, and adrenalin. No serums or vaccines are included.

SOME OMISSIONS.

Cantharides, coca, jaborandi (the active principles of these are retained).

Arnica, bismuth oxide, cerium oxalate, cimicifuga, concentrated liquores, cusparia, galbanum, gamboge, hemlock, hops, iodide of sulphur, iron arsenate and the solutions of the perntrate and acetate of iron, lead carbonate, mezereon, pareira, picrotoxine, sarsaparilla, silver oxide, sulpho-carbolates of sodium and zinc, and others.

Standardisation of crude drugs and of preparations has been extended. Aconite, belladonna, cannabis indica, cinchona, gentian, ginger, ipecacuanha, jalap, liquorice, nux vomica, opium, various essential oils, storax, balsams of peru and of tolu, liquid extract of hydrastis, liquid extract of male fern, extract of hyoscyamus are all standardised in some way. Curiously, tincture of hyoscyamus is not standardised, and still has a dose of $\frac{1}{2}$ to 1 fluid drachm.

The tests laid down are, in general, of greater precision, and the quantitative tests have been increased in number. The limiting contamination with lead and arsenic is well insisted on in the case of drugs liable to this contamination.

Obituary.

ALEXANDER JOHN FRANCIS SKOTTOWE, M.D. GLASG.,
MOHAMMERAH.

WE regret to announce the death of Dr. A. J. F. Skottowe, which occurred at Mohammerah, on the Persian Gulf. Dr. Skottowe, who studied medicine at the University of Glasgow, took the degrees of M.B., C.M., in 1883, and that of M.D. in 1886. After having acted for a time as medical officer of health to the port of Levuka, Fiji, and as superintendent of the quarantine depot for the colony, he returned to Scotland, and, settling in Helensburgh, became its medical officer of health, a position which he held for fifteen years. It was during his tenure of office, and it was owing to his enthusiastic labours, that those reforms in the hospital and in the sanitation of the town were accomplished which have placed it in the front rank among health resorts. During this period he was an occasional contributor to the *Glasgow Medical Journal*, writing on subjects connected with public health, and his articles found wide appreciation. Three years ago he resigned his position upon being appointed medical officer to the Anglo-Persian Oil Company, the duties of which appointment involved residence at Mohammerah, where he died on 16th November, aged about 48 years. Dr. Skottowe, who was a second cousin of the late Lord Roberts, is survived by a widow and by a son and daughter.

WILLIAM MILLER, M.B., CH.B. GLASG.,
ROYAL NAVY.

WE regret to announce the death of Surgeon William Miller, who lost his life on 26th November by the explosion on H.M.S. *Bulwark*. Surgeon Miller, who was, like so many brave officers who have perished in this war, an only son, was born in

Falkirk 32 years ago, but spent his childhood and school years in Glasgow, passing from the Albert Road Academy, Pollok-shields, to the University, where he studied medicine, and took the degrees of M.B., Ch.B., in 1906. After graduation he became house surgeon, and afterwards house physician, in the Victoria Infirmary, and next went to Rangoon as ship's surgeon on the *Amarapoorah*. Returning to England, he was appointed to Haslar Naval Hospital, and in 1910 he received his first fleet appointment on board H.M.S. *Achilles*. He was then transferred to H.M.S. *Britomart*, on the China station, where he served for two and a half years, doing good work among the wounded in the rebellion in China which followed the establishment of the Chinese Republic, and receiving the thanks of the Chinese Government, accompanied by the presentation of a gold medal and diploma. He was commissioned to the *Bulwark* in July, and it had been arranged at the Admiralty that he should have leave of absence this winter to prosecute researches upon oriental disease upon which he was engaged, and which promised to produce important results. A host of friends will sympathise with his family in the loss they have sustained by his early death.

JOHN MILLER, M.D. ST. ANDREWS, L.F.P.S.G.,
CAMBUSLANG.

WE regret to announce the death of Dr. John Miller, which occurred in Cambuslang, at the residence of his son, Mr. Hugh J. Miller, J.P. Dr. Miller, who took the qualification of L.F.P.S.G. in 1858, and the degree of M.D. St. Andrews in 1862, practised medicine in Dennistoun and the Gallowgate district, but he had retired from practice a considerable time before his death, which took place on the 22nd November, 1914.

JAMES WILLIAM MOFFATT, M.B., CH.B. GLASG.,
GLASGOW.

WE regret to announce the death of Mr. J. W. Moffatt, which occurred at Ruchill Fever Hospital on 22nd November. Mr.

Moffatt, who was the only son of Mr. William Moffatt, headmaster of the Macdonald School, Rutherglen, was a brilliant student of the University of Glasgow, gaining the highest distinction in many of his classes. He took the degrees of M.B., Ch.B., with honours, and as first of his year was awarded the Brunton Memorial Prize. He was capped at the recent graduation ceremony on 8th October, and thereafter entered upon his professional career as house physician in Ruchill Hospital, where he contracted the infection to which he succumbed at the early age of 21 years. Writing upon the death of a student of his, the late Sir William Gairdner said—"I can quite understand how universally he was loved and respected. It is never too soon to die when such feelings can be left behind." The feelings of love and respect that were entertained for Mr. Moffatt by all who knew him prove that such a life is not wasted, even when it is brought to a premature close.

CURRENT TOPICS.

APPOINTMENTS.—The following appointments have recently been made:—

William MacAdam, M.D.Glasg. (M.B., 1909), M.A., B.Sc., D.P.H., to be Lecturer on Public Health in Sheffield University.

Royal Navy (23rd November): Temporary Surgeon D. K. Adams, M.B., Ch.B.Glasg. (1913), additional to *Vivid*, for disposal.

26th November: Fleet Surgeon O. Rees, M.D.Glasg. (M.B., 1889); to *Powerful* (temporary).

12th December: Temporary Surgeons W. A. Mills, M.B., Ch.B.Glasg. (1901), and F. Elliott, M.B., Ch.B.Glasg. (1896), to *Vivid*, additional for Plymouth Hospital, to date 15th December; Temporary Surgeon A. E. Struthers, M.B., Ch.B.Glasg. (1910), to *Victory*, additional for Haslar Hospital, to date 15th December.

Royal Army Medical Corps (23rd November): To be temporary Lieutenants—A. J. Couper, M.B., Ch.B.Glasg. (1907); G. W. Clark, M.B., Ch.B.Glasg. (1912); T. M. Newton, M.B., Ch.B.Glasg. (1913); R. C. Robertson, M.B., Ch.B.Glasg. (1914).

25th November: To be temporary Lieutenants—J. J. Russell, M.B., Ch.B.Glasg. (1910); W. H. Kiep, M.B., Ch.B.Glasg. (1908).

27th November: *Territorial Force*—1st Lowland Field Ambulance—Lieutenant-Colonel W. F. Somerville, M.D.Glasg., retired list (late of this Unit), to be Lieutenant-Colonel.

11th December: To be temporary Lieutenants—J. MacGregor, M.D.Glasg. (M.B., 1891); C. D. Rankin, M.D.Glasg. (M.B., 1905); C. Lundie, M.B., Ch.B.Glasg. (1912); N. I. Sinclair, M.B., Ch.B.Glasg. (1913); J. A. N. Scott, M.D.Glasg. (M.B., 1890); J. F. M. Sloan, M.B., Ch.B.Glasg. (1912).

16th December: To be temporary Lieutenants—A. T. Ross, M.D. Glasg. (M.B., 1902), F.R.C.S.E.; D. D. Logan, M.D. Glasg. (M.B., 1900), D.P.H.; R. S. Miller, M.D. Glasg. (M.B., 1911); J. T. Kirkland, M.B., Ch.B. Glasg. (1909).

GENERAL MEDICAL COUNCIL: THE PROFESSION AND THE WAR.

—In the course of his introductory address at the opening of the winter session of the General Medical Council, the President, Principal Sir Donald MacAlister, said that communications had been received from several professional authorities inquiring as to the propriety of modifying or suspending some of the existing regulations in the case of students whose regular course of study for a medical qualification might be interrupted by reason of military service. The Executive Committee thought it right to intimate, by means of a circular addressed to all the licensing bodies, the answer it gave in the name of the Council to the general question thus raised. In view of its importance to the public and to the profession he thought it well to repeat there the words of the answer:—

“With regard to the courses of study and examination prescribed for professional qualifications, it is the statutory duty of the General Medical Council to secure the maintenance of such a standard of proficiency as shall sufficiently guarantee the possession by candidates of the knowledge and skill requisite for the efficient practice of their profession. To this end the Council has formulated, for the guidance of the licensing bodies, a series of recommendations respecting such courses. These recommendations represent in general terms the minimum curriculum which, in the Council’s opinion, should be required by the licensing bodies, and the Council notes with satisfaction that the regulations of the several bodies give effect to them. Cases may arise in which, during the present national emergency, the bodies deem it expedient to modify or suspend the application of their regulations to particular candidates, but the Council expects that all such cases shall be duly recorded and reported to the Council in the usual way. The Council feels sure that, in dealing with applications for modification or suspension of their regulations, the bodies concerned will recognise the importance in the public interest of maintaining, unimpaired, the present standard of knowledge and skill required of all who seek to be admitted to the status and privileges of registered practitioners, and will accordingly agree with the Council that it is desirable to secure in every instance that the requirements of the minimum curriculum are substantially fulfilled.”

He had reason to believe that this statement had commended itself to the authorities concerned and to the profession at large. Multitudes of their medical brethren had nobly offered themselves for service with our troops at home and abroad. Many had already laid down their lives in the performance of that humane duty. The toll of war was not yet complete. They must face the certainty that ere long the ranks of their profession would be sadly depleted. Ample reserves were necessary to supply the places of those who fell on the field of honour. These reserves would be constituted by those whom they were now admitting to the status and privileges of registered practitioners. They should best honour the memory of the fallen, and most surely safeguard the welfare of their forces and their people, if they did all in their power to secure that the men who entered the profession now were as fully and efficiently trained as their predecessors for the service they would soon be called to render. The need for efficient physicians and surgeons in the field and at home was not less urgent than the need for efficient soldiers and sailors. He had felt it his duty to press this consideration on senior students who, though they had nearly completed their curriculum, were ready to forego the prospect of early qualification and to enrol themselves straightway in the combatant forces.

It was currently reported that, owing to the war, the number of students of all years enrolled for the present annus medicus was much below the average. If this were true the risk of a serious shortage in the future supply of qualified practitioners would appear to be imminent. The data in the possession of the Council did not enable him to furnish an answer to the enquiries that had reached him from various public authorities interested in the subject. He had therefore thought it desirable to procure, so far as he could do so on his own responsibility, materials for a trustworthy estimate of the aggregate numbers likely to be ready for qualification in the next two or three years. The statistics, if he succeeded in obtaining them, might prove of value from more than one point of view.

An inevitable dislocation of civil practice, both under the National Insurance Act and in general, arose in August and September from the mobilisation of practitioners attached as surgeons to military hospitals and to Territorial and other

Service units. They had gratifying evidence that throughout the country the fraternal spirit shown by their colleagues did much to diminish the resulting difficulties experienced by such practitioners in providing for the care of their patients. In most localities a temporary working arrangement had been made by which the needs of the civil community would be met for the present. Plans had, moreover, been devised in consultation with the National Insurance and the military authorities which might, it was hoped, have the effect of removing certain defects in existing arrangements that actual experience had made manifest. The Executive Committee had had submitted to it various proposals bearing on these subjects, and, so far as lay within its province, had offered advice upon them.

MEDICAL STUDENTS AND THE WAR.—We have received the following letter from Principal Sir Donald MacAlister, President of the General Medical Council:—

MEDICAL COUNCIL OFFICE,
299 OXFORD STREET,
LONDON, 10th December, 1914.

(*To the Editors of the "Glasgow Medical Journal."*)

SIR,—In my presidential address to the General Medical Council on 24th November, I expressed the opinion that "the need for efficient physicians and surgeons, in the field and at home, is not less urgent than the need for efficient soldiers and sailors;" and, I said that I had "felt it my duty to press this consideration on senior students, who, though they have nearly completed their curriculum, are ready to forego the prospect of early qualification and to enrol themselves straightway in the combatant forces."

To-day I have received a letter from Surgeon-General Sir Alfred Keogh, which contains the following passage:—"I think with you that the senior student is best fulfilling his duty to the country by getting his degree, and then joining the Army. The need for young qualified men will become great, and I should regret that the supply should be diminished."

As I daily receive letters from senior students and their parents, who desire guidance in their choice of apparently conflicting duties, I shall be grateful if you will make known the opinion held at the War Office on the subject.—I am, yours faithfully,

DONALD MACALISTER,
President, G. M. C.

We may add that the advice offered by Sir Donald MacAlister applies, *mutatis mutandis*, to women students as well as to men. Women doctors, it is true, have little opportunity of serving their country in the field, and women students are therefore apt to think that their best chance of usefulness is to go out with the Red Cross without waiting to take their degree. But their training is fitting them to be doctors, not nurses, and in the shortage which the withdrawal of the best of our young male doctors from civil practice to service in the field will probably cause in the ranks of the profession at home, the woman student, if she goes on to her degree, will find her true opportunity, and will be doing a work no less useful and necessary than that of succouring the wounded.

EFFECTS OF THE WAR UPON CIVIL PRACTICE.—A meeting of practitioners was held on 16th December in the Faculty Hall, Glasgow, to discuss the effects of the war upon civil medical practice, Dr. John Barlow, President of the Royal Faculty of Physicians and Surgeons, occupying the chair.

Dr. Norman Walker, Convener of the Scottish Medical Service Emergency Committee, who first addressed the meeting, gave an account of the steps taken to meet the difficulties in regard to medical practice among the civil population which have arisen owing to the departure of practitioners summoned to take up military duty. The committee, which was formed in the early days of the war on the initiative of Dr. Hamilton, Chairman of the Scottish Committee of the British Medical Association, had issued a circular in which a number of suggestions were made for dealing with the present emergency. One of these was that it should be generally agreed that the fee offered to a *locum tenens* taking the work of a practitioner engaged in military duty should not exceed five guineas per week. The fees asked by *locum tenens* had in the last few years been steadily mounting upwards, and while they were all agreed that some men were worth more than others, it was too often forgotten that the fee was not a charge on a public body but on a member of one's own profession. This recommendation by the committee had been very generally and very loyally accepted. Another suggestion was that retired practitioners willing to relieve their professional brethren, and

so enable them to serve their country in the field, should send their names to the committee for registration and ultimate allocation to temporarily vacant practices. They had received a good many names, but it had been found that it was not easy for a practitioner in the neighbourhood of 60 years to face a hard country or colliery practice, as he was sometimes asked to do. There were some men who had heroically undertaken work which was going to tax their strength, but still he thought there was room for those retired men who were unable for the whole work of a practice. There were many districts where a large part of the work was in the consulting-room. This could very well be done by such men, while the visiting could be done by younger men who had not been summoned to military duty. The committee further proposed that permission should be granted by educational authorities to school medical officers to give at least part of their time to general work. Their next suggestion was that the visiting staffs of large hospitals, infirmaries, and asylums should consent to a reduction of the numbers of their medical residents and clinical assistants, and should themselves undertake a proportion of the work usually assigned to these junior officers. They also proposed that in the larger towns young practitioners whose practices were not yet extensive should in pairs make an arrangement whereby one would undertake the whole town practice for, say, two months while the other acted temporarily in the country for a third colleague absent on duty, and so alternatively for successive periods. The position created by the war presented an opportunity to women doctors, because in filling the places of men who were on military duty they would have a chance of demonstrating their fitness such as they had never had before. He foresaw that in the next few months with the officering of the newly-enlisted men there would come a period of even greater stress upon the medical profession, and as the new graduates almost all joined the Army they would have to depend largely on organisation to carry on the work. There was not much difficulty in the larger towns. In the smaller towns the position was not so easy, but many cases had been arranged, and nearly all could be arranged provided goodwill was present. In the rural districts matters were even more

difficult. No doctor who was busy in his own practice could adequately do duty for an absent colleague whose centre was ten miles away. In such circumstances they must have a *locum tenens*, and he made a special appeal to those who had available colleagues to exhaust every effort to make arrangements with these colleagues and so leave the "*locums*," of whom the supply was very short, for the places where they were necessary, or, if some assistance must be got, that they should accept one of the retired physicians, who would do the consulting-room work. He did not think that the doctors who might be away for a year could expect that all their patients would come back to them when they returned, but in most cases nearly all would if those who were doing the work made it clear to the patients that they were attending on behalf of their absent colleague. Nearly everyone had refused to accept the transfer of insured persons on an absent colleague's list, but he regretted to have to use the qualifying word.

Dr. Drever, Secretary of the Glasgow Local and Panel Committees, stated that a scheme had been drawn up in Glasgow for the purpose of meeting the emergency. Under this scheme a list of volunteers willing to do the work of men on service had been prepared. The insured patients of the absent doctors were transferred temporarily to the volunteers, in each case to be held in trust until the return of the absent doctor, when they would be automatically restored to his list.

Principal Sir Donald MacAlister said he had been very much interested in the work of the Scottish Emergency Committee, because the executive of the General Medical Council were interested in a number of the questions which were touched on by the operations of the committee. One of the questions was the dislocation of civil practice by the transfer of doctors who had in times of peace given in their names to serve along with Territorial units. When these units mobilised, or, worse still, when some of them volunteered for foreign service and were ordered abroad, the conditions on which these doctors had left their practices had to be considered very carefully. All over the country there were single practice areas, and the question of settling *locum-tenentes* in these was instant and extraordinarily difficult, especially in such places as Shetland, while in various parts of the Highlands men who had done special

work were taken away, with the result that areas were deprived of services that could not be dispensed with without danger to the civil population. Another point which came before the Medical Council was the difficulty of getting *locum-tenentes*, which was very considerable at the present time, and he would strongly reinforce what Dr. Walker had said, that they should not in places like Glasgow or Edinburgh put any strain on the supply, because in single practice areas there was no other way of getting the population attended to. There were a thousand fewer medical students in attendance at medical courses all over the country than there were last year. Some of the students would come back, but they were postponing their qualification, so that the dearth caused by the continual drain upon qualified medical men was going to be supplemented by a deficient supply.

A vote of thanks to Dr. Walker for his address was awarded, on the motion of Principal MacAlister.

EFFECTS OF THE WAR ON THE SUPPLY OF DRUGS.—In the course of a discussion upon this subject, held by the Pharmaceutical Society in London on 8th December, several members of the committee appointed to advise the Government with regard to the prices of drugs made interesting statements.

Mr. C. A. Hill said that we were not entirely dependent upon Germany for any elementary substance of importance in medicine, although we were mainly dependent on her for several. With regard to synthetic products and other drugs made only in Germany, the reason why stocks had not already disappeared was that the high prices had checked the consumption, and, in consequence, the reduced demand had prevented an absolute famine. After four months we did not find ourselves without many necessities.

Mr. J. C. Umney said the action of the Government, in consultation with a Drug Supply Advisory Committee, in framing an effective schedule of contraband of war, and allowing departure from it only under well-considered and definite provisions, had done much to prevent clearance of existing stocks, and so to protect the interests of our land and sea forces as well as those of the civil population. That action might be said to have levelled prices from the range of fancy

to fact in the short space of two or three weeks. He added that the lesson taught by the scarcity of vegetable drugs, as the result of shutting off German and Austrian supplies, was the necessity for extended cultivation of drugs and aromatic plants throughout the British Empire.

Professor H. G. Greenish, joint editor of the *British Pharmacopæia*, said there was little doubt that the number of medicinal plants at present under cultivation in the various divisions of the Empire might be very considerably increased. It was estimated that about eighty-five medicinal plants had been successfully grown in Germany, but for economic reasons this industry had diminished of late years. We had to ask ourselves whether it was not possible to find a substitute for a drug the supply of which had been seriously curtailed, and he expressed the opinion that necessity would compel us to secure parallel drugs, and, in the event of such not being forthcoming, to prosecute the cultivation of the drug we required in some quarter of the Empire where the climate and the soil were suitable.

Mr. J. W. Gamble, reviewing the effect of the war on the demand for serums and vaccines, said that since the outbreak of the war typhoid vaccine had been supplied to the War Office on a large scale, and that there had been an extensive demand for antiseptis vaccine, tetanus antitoxin, and calf lymph for the inoculation of the troops.

GLASGOW MEDICAL CASUALTIES.—A letter received in Glasgow early in December by the relatives of Captain Hugo Given Robertson, R.A.M.C., who has been missing since 30th October, brings the information that he is a prisoner in Germany. Captain Robertson is a graduate of Glasgow University, having taken the degrees of M.B., Ch.B., in 1908, and having been in the R.A.M.C. for about seven years. He was captured by the Germans at Ypres in a house where he was attending to wounded soldiers, and he states that since being taken to Germany he has been well treated.

Information was also received in Glasgow, on 16th December, that Second Lieutenant Ronald T. Grant had been wounded in the recent fighting in Belgium. Immediately after the outbreak of the war he joined the Special Reserve of Officers

from Glasgow University Officers Training Corps, and was gazetted to the 4th Argyll and Sutherland Highlanders. On proceeding to the front about three weeks ago he was attached to the 1st Gordon Highlanders. Prior to joining the Special Reserve of Officers he held the rank of Colour-Sergeant of B Company of the Glasgow University Officers Training Corps. He was in his final year as a student of medicine.

RED CROSS SOCIETY.—The funds of the Scottish Branch of the Red Cross Society were much benefited towards the end of November by a collection made in Glasgow and many parts of Scotland. The "Flag Day," under the patronage of the Lord Provost and Magistrates, and promoted by the Boys' Brigade and Voluntary Aid Detachments, was organised to aid the transport work of the Society, and to assist in maintaining the Scottish hospital in France. In spite of very unfavourable weather, the energy of the collectors, who numbered more than 5,000 members of the Boys' Brigade and 1,000 ladies of the Voluntary Aid Detachments, was rewarded in Glasgow alone by a sum of £4,050, while the total amount collected was £10,380, as far as returns had been made up to 27th November. The day was marked in Glasgow by a parade of twenty motor ambulances about to be sent by the Society to the front, by a military tattoo in Queen's Park in which many of the local bands took part, and by open-air concerts and fancy dress parades arranged by a committee representing the fruit trade.

At the end of the month the Headquarters Organising Committee made an appeal for warm underwear, and for Cardigan jackets, gloves, mittens, mufflers, and lumbago belts. They acknowledged receipt of many useful consignments of clothing and gifts, and reported that during November £108, 4s. 10d. had been taken from collecting boxes in Glasgow; from collecting books, £43, 3s. 5d.; and from the sale of Red Cross stamps, £89, 14s. 6d. Since the beginning of the war the Scottish Branch had issued in all 116,910 garments and other articles, which were distributed as follows:—To France, 52,660; to Belgium, 13,330; to Stobhill Hospital, 12,900; to local small hospitals and convalescent homes, 25,310; to the Indian Hospital, 1,800; to the Canadian Contingent Hospital, 310; to Serbia, 6,400. In addition, there had been sent out—82 cases

of books and magazines, 60,000 cigarettes, 115 lb. of tobacco, 15,000 bandages, and 3,500 splints. Provision for furnishing a recreation room at the Rouen Hospital had also been sent out.

During the month the No. 11 Hospital at Rouen was inspected by Sir Arthur Sloggett, who expressed his high appreciation of the equipment and personnel of the Scottish section.

A series of concerts for the benefit of the general fund was organised during December, the first being given by the Scotch Girls' Friendly Society on 14th December in the Kent Hall, St. Andrew's Halls; and the second, a patriotic concert arranged by the National Commercial Temperance League, on 18th December in the St. Andrew's Halls. A *matinée* performance for the same object was also given in Hengler's Circus on 15th December, the entire proceeds (£185) going to the Red Cross Fund.

The Red Cross Hospital provided by the North British Locomotive Company in the administrative building at their works in Springburn was open for inspection on 7th December. The structural alterations necessary to fit the building for a hospital have been carried out by the firm, and the equipment has been supplied by the British Red Cross Society (Scottish Branch). There is accommodation for 150 patients in three wards, which are named after the three works of the company. *viz.*:—Hydepark, Atlas, and Queen's Park. The entrance to the building is by the porter's lodge at 99 Adamswell Street. To the left of the entrance corridor is the operating theatre. On the same floor are the hospital offices, the matron's office and sitting room, the visiting surgeon's consulting room, dispensary, test room, and three residents' bedrooms and dining-room, male staff dining-room and patients' lounge. To the right of the entrance corridor is situated the Hydepark Ward, which is 126 feet long by 45 feet wide. The ward is lit by incandescent reflected lights, there being no direct light on the eyes. The Atlas Ward is entered from the Hydepark Ward. A special bath-room and housemaids' pantry have been built out from the Atlas Ward, and at the end is a screened-off portion for serious cases, near which is a large strong-room which has been converted into an *x-ray* room. The Queen's Park Ward is situated on the floor below, and adjoining are bath-rooms,

lavatories, and other accommodation. In each of the wards is a closed-in kitchen with outside ventilation. On the second floor are the main hospital kitchen, the nurses' and maids' bedrooms, dormitory, and dining and sitting rooms. It is proposed to provide a patients' recreation room on the premises.

Among those who were present at the inspection were Sir Hector Cameron, Mr. Hugh Reid, Dr. J. Maxtone Thom, Mr. and Mrs. John Reid, Mrs. Stewart, Murdostoun; Mr. Alexander Campbell, Mr. William George Black, Dr. Rowan, and Mr. D. Baird Smith.

As an illustration of the work done by the Transport Committee of the Scottish Branch in the Glasgow district its statistics from 30th November to 6th December, inclusive, may be quoted:—There were 165 runs of ordinary cars, and 20 runs of ambulance cars during that period. During the same period 496 sitting patients and 26 lying down patients were conveyed, along with 137 staff officers and orderlies. The hours of the runs ranged from 8 A.M. to midnight. During the same period one ambulance train arrived at Stobhill, containing 25 lying down patients and 75 sitting up patients, and the Transport Committee arranged for the conveyance of these from the temporary platform to the hospital. In addition to the hospital work, a considerable number of cars and vans of the society were used for the collection and delivery of Red Cross material and goods.

The rest stations established at the principal railway stations in Glasgow have been freely used by sick and wounded soldiers passing through the city.

On 11th December the Headquarters Organising Committee issued a further appeal for flannel vests and pants, day-shirts, warm knitted articles, and also for boracic and ordinary lint, gauze, and bandage cloth. Gifts of gramophones were also requested for the hospitals at Rouen and Springburn. A favourable report was received from Colonel Skinner, Rouen, on the work of the Scottish motor ambulance there, and the executive decided to attach a number of these ambulances to the Scottish hospital at Rouen.

On 12th December, at a meeting held in the Christian Institute, Glasgow, Lady Eglinton handed to Sir George Beatson, for the Scottish Branch, a sum of about £3,010

collected for "The Scottish Lassie" motor ambulance. The sum, she said, had been raised among Scottish lassies by small subscriptions, and it seemed almost incredible that it could have been raised in so short a time. The donors desired that it should be apportioned as follows:—£1,000 for the purchase and upkeep of a motor ambulance to be named "The Scottish Lassie, No. 1;" £500 for the purchase of a second car, to be named "The Scottish Lassie, No. 2;" £100 for pathological plant in the new hospital at Springburn; £100 for the naming of two beds in the same hospital, one to be called "White Heather," the other "Scottish Blue Bell;" the balance of the money to be devoted by the Red Cross Society to the furtherance of these objects and on behalf of the general funds.

Sir George Beatson, in acknowledging the donation, said that it should always be remembered that the care of the sick and wounded lay with the military authorities. The Red Cross Society worked under the military authorities and with them. They sometimes heard or read the question, Why was not the Red Cross doing this or that? The answer was because they must work in conjunction with the military people. It was they who knew the needs of the sick and wounded. Proceeding, he described the nature and scope of the hospital work engaged in by the Scottish Branch in France, and said that he was perfectly satisfied, from what he saw of the hospital work at Rouen, that the British soldier was getting the very best of treatment.

The Women's Liberal Associations affiliated to the Women's Liberal Federation, in addition to making comforts for the wounded, helping the Red Cross and St. John Ambulance Associations, and organising recreation rooms for the soldiers, have issued an appeal to the Associations throughout the country for donations towards a motor ambulance as a Christmas gift from the Federation for the use of the wounded. Donations are to be sent as soon as possible to the office of the W.L.F., 72 Victoria Street, London, S.W., in envelopes marked "Motor Ambulance."

A motor ambulance flag day, held in Paisley on 12th December, realised a sum of over £236.

An appeal was made on 16th December for gifts in kind to

complete the furnishing of the Springburn Hospital, the gifts desired being furniture and furnishings, such as pictures and flowers. Intending donors should communicate with Mrs. Charles Cree, St. Andrew's Halls.

The Red Cross Press Bureau has issued the following intimation:—We have the authority of the War Office to state that no further voluntary hospitals whatever are required at present for the British Expeditionary Force in France, and that any voluntary hospitals at present on the Continent, or which may at some future time proceed to the Continent, will work as base hospitals, and will not be allowed to proceed farther.

HEALTH OF THE NAVY.—The statistical report on the health of the British Navy, published as a Blue Book by the Admiralty on 11th December, shows a continuous improvement in the general health of the fleet as compared with the preceding five years. There has been a decrease in invaliding as compared with the previous five years, but an increase in deaths, though only a fractional increase. The total force for the year 1913 was 126,830, and the total number of cases of disease and injury entered on the sick list was 77,438. This gives a ratio of 610·56 per 1,000, a decrease of 46·9 as compared with the average of the previous five years. The total number of days' sickness was 1,101,633, which represents an average loss of service for each person of 8·68 days, a decrease of 1·16 compared with the average for the preceding five years. The total number invalided was 1,925 (17 finally, the remainder temporarily, some of whom may rejoin); 1,795 invalidings were for disease and 130 for injuries. The deaths for the year averaged 3·24 per 1,000.

“THE BRITISH PHARMACOPŒIA, 1914.”—We are requested to intimate that a few typographical errors, noted by various reviewers in the advance copies sent out for review, will be corrected in the official issue by means of slips of corrigenda to be inserted in the volume as published.

MEDICAL INSPECTION OF SCHOOLS.—At the ceremonial opening of Onslow Drive Public School, Dennistoun, Dr. Henry Dyer, chairman of the Glasgow School Board, presiding, Mr. William

M. Haddow, who declared the school open, spoke of recent legislation and what it had compelled school boards to do for the child. Much useful and necessary work was being done, he said, with the ratepayers' money. A great mass of recent legislation had been on behalf of abnormal children hitherto neglected. The Board had under its care 1,108 mentally defective children and 1,425 who were physically defective. Some ratepayers might grudge the extra cost to the Board of these children; but they had the satisfactory result that within eighteen months they could so improve more than 50 per cent of the physically defective children that they were able to return them to the ordinary classes. In other words, the pupils were cured of their defects. They were not so successful with the mental cases, as only about 15 per cent were able to proceed to the ordinary school, but all were given a new outlook in life. Mr. Haddow spoke of the good effects on the hearing and sight and general health of the children due to school medical inspection. He said they were only at the beginning of that crusade for the health of the child. There never was a time when the nation was more in need of a healthy and strong race of men and women, and had that work been started ten or twenty years ago we would have been better able to stand the strain we were called upon to bear at the present crisis of our national history. We could not breed an Imperial race out of the slums of our city. Unless the City Fathers tackled the housing question much of the work the School Board were doing must tend to be largely undone because of the overcrowded conditions in which many of the citizens were compelled to pass their lives.

MEDICAL INSPECTION OF SCHOOL CHILDREN.—A meeting of Govan Parish School Board, which is said to have been the first board in Scotland to institute medical inspection, was held on 15th December, 1914, under the presidency of the Rev. Dr. John Smith, Partick. The Medical Officer's seventh annual report on inspection, dealing with the year ended 30th June, 1914, was submitted by Mr. M'Fie. It stated that during the year a whole-time medical staff was instituted to meet the extra demands for medical inspection, and more especially for treatment of defective children. In previous years from 2,500

to 3,000 children were discovered by medical inspection to be in need of treatment, and of that number only some 45 to 50 per cent actually received treatment. The benefit of the establishment of the treatment clinics was evident from the fact that during the year under review 3,377 children were treated for diseases of the eyes, defective vision, skin diseases, diseases of the ear, nose, and throat, and for dental conditions. In addition to the children who attended the clinics the Board had records to show that at least 618 children received satisfactory treatment by the family medical attendant. Those figures showed both the large amount of good work which was the direct result of medical inspection during the year, and also the value of establishing treatment clinics. The number of pupils examined by the medical staff during the year was 9,526 routine children and 10,361 non-routine children—a total of 19,887 examinations for the year. In addition there were 2,325 special examinations made in the investigation of necessitous children. The grand total of examinations for the year was therefore 22,212. As the result of the systematic examination of the eyes of the school children during the past three years the advisability of establishing classes for the partially blind had been clearly indicated. The Board had decided to establish an experimental class for these unfortunate children. This development would undoubtedly supply suitable means of continuing the education of a limited number of these children without incurring the danger of further damage to their eyesight during school life. If this class was a success the question of making further provision would be carefully considered by the Board. During the year 927 necessitous children were supplied with 57,000 dinners, and 1,561 pairs of boots were supplied. A beginning had now been made in supplying clothing where necessary. The cost of the food was 0·9d, and the cost of administration, taking into account all charges on capital, was 2·1d. Special reference was made in the report to the necessity of dealing with dental treatment in a systematic manner. A definite scheme had been submitted by the medical officer with the object of obtaining systematic supervision of the teeth of the younger children. The principle of prevention rather than indiscriminate treatment was advocated.

STATE INSURANCE.—A Blue Book, issued on 30th November, contains the report of the Departmental Committee on Sickness Benefit Claims under the Insurance Act. The Committee state that they are of opinion that, notwithstanding the difficulties involved in bringing so complicated an Act into operation, the machinery for the administration of benefits is, on the whole, working as smoothly as could reasonably have been anticipated. They add that the medical benefit as administered is proving as great an advantage to insured persons as could have been anticipated by any well-wisher of the Act.

Over-insurance is, in the Committee's opinion, the definite cause of excessive sickness claims, and they believe it to be desirable that approved societies should discourage members from continuing the scale of insurance on the private side for the weekly sickness payments which, when combined with sickness benefit under the Act, causes them to be over-insured. Taking women as a whole, say the Committee, experience shows sufficient provision has not been made for sickness benefit granted to women under the Act. Either the premium is insufficient, or the policy money too great.

In the case of both sexes great difficulty is caused by doubt as to the meaning of the criterion of incapacity set up under the Act, and the Committee recommend that the conditions of sickness benefit should be more precisely defined, and, further, that it should be provided by Statute that sickness benefit should be payable when the insured person is incapacitated by disease or bodily or mental disablement from following his occupation.

The Committee also recommend a new benefit in regard to women in pregnancy, and suggest that application be made to the Treasury for the provision of such a sum as will remove the whole financial burden in respect of payment of this benefit from the funds of approved societies.

The Committee remark that they have received evidence that the institution of a system of nursing for insured persons would tend to shorten sickness claims, and if such service is to be instituted aid must be obtained from the Exchequer.

A further recommendation is that the whole question of the scope of medical benefit should be considered at an early date by a Departmental Committee or Commission, and the

Committee is of opinion that in view of the difficulties experienced regarding certification it is necessary that a system of medical referees should be established as soon as possible.

STATE INSURANCE: GLASGOW PANEL DOCTORS.—The Insurance Committee for the burgh of Glasgow has issued the list for 1915 of medical practitioners undertaking the treatment of insured persons, and of chemists and other persons undertaking the dispensing of medicines or the supply of drugs or appliances under the National Insurance Acts. The list contains the names of 375 doctors and 198 chemists, a number regarded as sufficient to provide adequate medical and pharmaceutical services for the insured persons within the committee's area. In a notice which accompanies the list, insured persons are advised that those who wish to make application to a doctor on the panel should do so by means of a medical card. Any insured persons who have not received a medical card should apply to the Clerk to the Insurance Committee, 59 Bell Street, Glasgow, on the appropriate form, which may be obtained at a post office. If it is desired to enter into an arrangement with a doctor whose name is not upon the medical list, the insured person should communicate in writing with the Clerk.

STATE INSURANCE: RULES FOR MEDICAL BENEFIT.—The Scottish Insurance Commissioners have issued to insurance committees model rules for the administration of medical benefit, which suggest the following rules with regard to the conduct of persons in receipt of medical benefit:—(1) He shall obey the instructions of the practitioner attending him; (2) he shall not conduct himself in a manner which is likely to retard his recovery; (3) he shall not make unreasonable demands upon the professional services of the practitioner attending him; (4) he shall, whenever his condition permits, attend at the surgery or place of residence of the practitioner attending him on such days and at such hours as may be appointed by the practitioner; (5) he shall not summon the practitioner to visit him between the hours of — p.m. and — a.m., except in cases of serious emergency; (6) he shall, when his condition requires a home visit, give notice to the practitioner, if the circumstances of the case permit, before — a.m. on

the day on which the visit is required. It is, of course, left to the insurance committees to fill in the blank spaces for the times. The committees may in their discretion inflict a fine on any insured person who is guilty of a breach of any of these rules, but no fine may exceed 10s., or, in the case of repeated breaches of rules, 20s. The model rules also provide for the procedure of the medical service, pharmaceutical services, and joint services sub-committees.

THE WESTERN INFIRMARY: ANNUAL MEETING.—The fortieth annual general meeting of qualified contributors to the Western Infirmary of Glasgow was held on 26th November in the Merchants' House. Lord Provost Dunlop presided, and among those present were Sir Matthew Arthur, Bart.; Sir Hector Cameron, Sir John Ure Primrose, Sir James Bell, Mr. J. A. Roxburgh, Mr. Nicol Paton Brown, Mr. James Graham, Dean of Guild Hedderwick, Mr. David Johnstone, Deacon-Convener Beattie, and Mr. Arthur Hart.

In moving the adoption of the report, the chairman said that he had been glad to observe the substantial amount of subscriptions which had been received from the working men in Glasgow. It had been feared that a result of the National Insurance Act would have been a diminution in subscriptions from public works and other industrial enterprises, but it was extremely gratifying to find that these contributions continued to be sent in with the same regularity and generosity as heretofore. On this occasion the directors reported an increase of £225, showing that the working men realised the benefit of the infirmaries and appreciated the treatment and assistance they received there. The working classes of Glasgow contributed as largely as any other class, if not more when their incomes were considered, to all public movements of a philanthropic character. During the past year infirmaries and hospitals had demonstrated in a remarkable degree their usefulness to the nation in a direction which they had hoped would never have been their experience. No fewer than 20 doctors from the Western Infirmary were either at the front or were attached to the military hospitals at home, and 70 nurses trained in the Western were in similar positions. He congratulated the infirmary on the possession of so many patriotic

members of the staff. The infirmary was entitled to the support of everyone interested in our troops.

Sir Matthew Arthur, who seconded, said the report was a record of a year's good work ; 9,591 indoor patients had been treated, 200 more than last year. The only thing to be regretted was that while the number of patients and consequently the annual expenditure had both increased, the annual ordinary income had remained stationary. Large as the extraordinary income had been, it was necessary to transfer nearly three-fourths of it to meet the difference between ordinary income and expenditure. The managers could not contemplate without anxiety the prospect of having to meet an expenditure of over £44,000 with an income of less than £24,000, when the unrestricted capital only amounted to £17,000, and they could not expect the extraordinary income to be nearly so large in the coming year ; so they appealed very earnestly for increased contributions towards maintenance. If necessity arose all connected with the infirmary would be glad to assist so far as might lie in their power in the treatment of the wounded soldiers and sailors. They understood from the military authorities that that need had not yet arisen, and as there were nearly 900 civilian patients awaiting admission they had thought it their duty for the present to devote their attention to their ordinary work. The Lady Hozier Convalescent Home had been offered and was being used as a convalescent home for wounded soldiers, and Lord Newlands had done everything he could to contribute to their comfort. The medical and surgical staff were doing their share of the military work. Colonel Mackintosh was Assistant Director of Medical Services for the Lowland Division, and Miss Gregory Smith, the matron, was Principal Matron of No. 3 Military Hospital, Stobhill.

The report was adopted.

A vote of thanks to the donors and subscribers was moved by Sir James Bell, and seconded by Mr. David Johnston, the honorary treasurer ; and a similar vote to the medical and surgical officers was moved by Sir John Ure Primrose, and seconded by Mr. J. A. Roxburgh.

On the motion of Deacon-Convener Beattie, seconded by Sir Hector Cameron, Mrs. Fred. J. Stephen, Mr. J. A. Roxburgh, Mr. James Graham, Mrs. Hall, Mr. David Johnston, Mr.

William Robertson, Mr. Thomas Russell, Mr. Andrew Welch, Sir George T. Beatson, Mr. R. Hunter Dunn, and Mr. Henry Mechan were appointed managers for the current year; and Mr. Nicol Paton Brown, Mr. Daniel Harvey, and Mr. John Hill were appointed to fill the remaining vacancies on the board.

WOODILEE MENTAL HOSPITAL: ANNUAL REPORT.—Dr. Henry Carre, Medical Superintendent of the Glasgow District Mental Hospital at Woodilee, Lenzie, has issued his report for the year ended 15th May, 1914. On that date the number of patients in the hospital was 1,097 (564 males and 533 females), an increase of 32 (21 males and 11 females), as compared with the previous year. Of 344 patients admitted during the year the numbers of persons single, married, and widowed were respectively 159, 135, and 47. In 3 cases the civil state was unknown. The average age on admission was in the case of males 40·97 years, and in females 44·5 years. The ages of the majority of the men were from 25 to 29 years, and from 35 to 39 years, and of the women from 35 to 54 years. The age of the youngest patient (who was admitted to the Home for Imbecile Children) was 2 years and 5 months, and the oldest patient admitted was a woman of 89 years. Dr. Carre further states that the outstanding probable factors ascertained to be either predisposing or exciting causes of the mental breakdown in those admitted were as follows:—Intemperance, in 67 cases, or 19·5 per cent; previous attacks, in 61 cases, or 17·7 per cent; senile decay, in 51 cases, or 14·8 per cent; mental stress, in 46 cases, or 13·4 per cent; hereditary predisposition in 37 cases, or 10·7 per cent; congenital or infantile defect, in 36 cases, or 10·4 per cent. The number of patients discharged as recovered was 105, of whom 52 were males and 53 females.

GOVĀN DISTRICT ASYLUM: ANNUAL REPORT.—In the eighteenth annual report of the Govan District Asylum, Hawkhead, Paisley, Dr. James H. Macdonald, medical superintendent, states that during the year ending 14th May 956 patients were under treatment, an increase of 36 over the previous twelve months, and of these 85, or 27·5 per cent, recovered. The number of

deaths was 125, which gave a rate of 19·1. Dealing with the causes of insanity, Dr. Macdonald states that two factors stood out pre-eminent—physical debility and disease, and alcoholic excess. Referring to the latter, the report adds that alcoholic excess was present as the predominant causative agent in no less than 25·2 per cent of the men and 7·6 per cent of the women. As a rule, alcoholic excess was found to be associated with a reduced physical condition or actual bodily disease. The question of the relation of alcoholism to insanity was a many-sided one, but it might reasonably be contended that if it could give rise to mental disorder in individuals with a clean bill of health, it was much more likely to have disastrous effects upon those already weakened by physical disease or malnutrition. These figures, it was stated, related exclusively to patients admitted to the asylum for the first time. When that was considered in conjunction with the fact that a considerable proportion of individuals suffering from acute forms of mental disorder (delirium tremens) were not sent to the asylum, but were treated in observation wards, it could hardly be denied that excessive drinking habits were largely responsible for the prevalence of mental unsoundness in the community.

Dr. Macdonald also referred to the retirement of Dr. Watson from the medical superintendence of the asylum after almost twenty years' service.

ORPHAN HOMES OF SCOTLAND.—The annual meeting of the subscribers to these Homes was held on 30th November in the Christian Institute, Glasgow, Colonel John M. Denny occupying the chair. The annual report was submitted by Pastor D. J. Findlay, who stated that the year 1914 would always be one specially notable in the history of the Homes owing to the fact that during it the money gifts received since the Homes were founded by Mr. Quarrier in 1871 reached the grand total of £1,000,000. On 1st November, 1913, there were under care 1,330 boys and girls in the Orphan Homes, 133 patients in the Sanatoria, and 85 men, women, and children in the Colony for Epileptics. During the twelve months there had been added to these numbers 375 boys and girls, 331 consumptives, and 45 colonists, giving a total of 2,299, not including the large band of workers who are members of the community at the Homes.

The financial statement, he said, was very satisfactory. For the Orphan Homes they had received £38,836, which, with a balance of £13,000, made a total of £52,810. The expenditure amounted to £27,191, leaving a credit balance of £25,619. The accounts for the Consumptive Sanatoria showed a credit balance of £3,724, and for the Colony for Epileptics a credit balance of £4,752. There had been no addition to the buildings during the year. The old ship which for something like thirty years had done good service was no longer in use, so they had actually one building less at the close of this year.

The report was adopted on the motion of the chairman, which was seconded by Sir Samuel Chisholm. In the course of his speech the chairman referred appreciatively to the work done in the Sanatoria and in the Colony for Epileptics, and Dr. W. L. Reid, who spoke later, emphasised some points in the report relating to these institutions. Cases of consumption, he said, were not sent to the Sanatoria in the early stage. Of 325 admitted during the year only 29 had the disease limited to one lung. Since the National Insurance Act came into operation cases had been sent in on the average at a later stage than formerly, although this was not the fault of the medical officers of health. Incurable homes were needed for these cases, to prevent the spread of the disease in the community. The shortness of residence of the patients in sanatoria was also to be deplored. Many of those sent in by the National Insurance authorities were sent for a limited time, during which only arrest of the disease was possible. The ideal would be that the insurance should be continued until the medical officer in the sanatorium was able to say that the patient had a fair chance of being able to go back and to continue at his work.

LITERARY INTELLIGENCE.—Messrs. J. & A. Churchill announce for publication *Medical Diagnosis*, by Arthur Latham, M.A., M.D.Oxon., F.R.C.P.Lond., Physician and Lecturer on Medicine, St. George's Hospital, and James Torrens, M.B., B.S.Lond., M.R.C.P.Lond., Assistant Physician, St. George's Hospital and the Paddington Green Children's Hospital. The volume deals with both the clinical and the laboratory methods of diagnosis in their most modern aspects, and is intended both for the student and the practitioner. All forms of disease are treated

in as concise and practical a form as possible, whilst full details are given of all the usual tests or investigations which may be required. Illustrations (some in colour) are freely used to assist the reader in following the text, and this is especially the case in the section on diseases of the nervous system.

We have received from Messrs. Felix Alcan and R. Lisbonne, publishers of the *Revue de Médecine* and of the *Revue de Chirurgie*, an intimation that the outbreak of war has compelled them, on account of the mobilisation of their editors and collaborators in the ambulance service, and of their printers in the army, to suspend the publication of these two journals. Publication will be resumed at the end of the war, and subscribers will then receive the issues for 1914 which are still to be sent them.

NEW PREPARATIONS, &c.

From Messrs. Burroughs, Wellcome & Co.

'*Tabloid*' *Hexamine* (grains 5).—This is stated to be the product of the Wellcome Chemical Works in England. It may be obtained also in 3-grain size. The name 'Hexamine' is the name officially adopted in the new *B.P.* for Hexamethylenetetramine. This drug, of course, is of wide application for rendering antiseptic the urine and some other fluids of the body, and such a preparation requires no extended statement in its favour.

'*Tabloid*' *Sodium Acid Phosphate* (grains 10) is for increasing the acidity of the urine, and is thus a useful adjuvant to Hexamine in pyuria and bacilluria and phosphaturia.

These 'Tabloid' preparations are, as is usual with this firm, beautifully made and nicely packed.

REVIEWS.

Sexual Ethics: A Study of Borderland Questions. By Professor ROBERT MICHELS. The Contemporary Science Series. London and Felling-on-Tyne: The Walter Scott Publishing Co. 1914.

PROFESSOR MICHELS, who occupies the chair of political economy and statistics at the University of Basle, has been led to the publication of this book as the result of a prolonged study of sex problems, and of his conviction that the way to a solution of these problems is not silence, but open statement of them. He offers little in the shape of attempts at their solution, but starting with the declaration that they are not to be finally settled upon the basis of any preconceived dogma, he pronounces for frankness in their handling. From this point of view he discusses sexual education, advocating that the child should be given general conceptions of the nature and object of sex, without a too particular detail. He then compares hunger and love, devotes a chapter to the nature and limits of modesty, attacks the problems of extra-conjugal intercourse, contrasts the sexual psychologies of various countries, treats of sexual morality in women, discusses the value and limits of chastity, and deals with the difficulties of the period of betrothal and those of marriage. His attitude throughout is dispassionate and judicial, as far as it is possible to be judicial in handling such a theme. The book is free from any suggestion of pruriency, and is the work of an open-minded and thoughtful man, who desires to be read by the thoughtful and the healthy, not by the frivolous or impressionable. But is it wise? "The Contemporary Science Series" is open at a small price to every purchaser, and a few cautionary words in the text will not deter the frivolous or impressionable from purchase or from misapplication. Acquired at an impressionable age, even accurate sexual knowledge is not free from danger, and it is impossible to see how young women can be benefited by

becoming aware of the existence of sadistic or masochistic perversions. It is more than questionable whether in these matters knowledge is so efficient a protection as innocence; and it is not without significance that, coincidentally with "free discussion," Münsterberg declares a state of *demiviergeisme* to be becoming more common in America. By undue preoccupation with the idea of sex, a young woman may find her healthy relationship to society entirely vitiated, may read danger in a casual introduction, and suspect narcotics in every cup of tea. Miss Christabel Pankhurst, in *The White Scourge*, has already published broadcast the monstrous statement that male anti-suffragists are opposed to "the vote," because they fear that when women have it the supply of harlots will diminish. If that extravagance is possible to a mind that has received at least a legal training, it is difficult to know where, in wholly untrained minds, extravagance is to end. It is in the long run principle, and not knowledge, that determines conduct and that guards against impulse; and principle is best maintained by a decent restraint in the discussion of the sexual relation.

Carbon Dioxide Snow: Its Therapeutic Uses (Methods of Collection and Application). By J. HALL-EDWARDS, L.R.C.P., F.R.S.E. London: Simpkin, Marshall, Hamilton, Kent & Co. 1913.

THIS little volume is designed to meet the requirements of the dermatologist and the general practitioner with regard to the use of carbon dioxide snow. After an introduction in which the author shows the superiority in many ways of the snow to liquid air, he proceeds to consider the advantages of treatment by its means, and compares its usefulness with that of liquid air.

A great part of the book is taken up with a description of the author's collector, and with details of how to prepare a cone and a stick of compressed CO₂ snow. Reference is also made to the preparation of snow in solution. The details of its application and the types of cases which are suitable for this treatment are fairly fully given.

There are a few misspellings which might have been corrected during the reading of the proofs. Again, on p. 42, destruction of the tissues by the snow is said to be "an after-result, and is due to reaction," while on the opposite page the destructive action is said to be due to "the dual effects of rapid freezing and rapid thawing. The freezing, it has been said, destroys the cells by causing them to rupture owing to the expansion of their contents at the moment refrigeration takes place."

Taken generally, however, the volume is a very clear exposition of the author's views on the therapeutic value of CO₂ snow. It is evidently based on wide experience, and is written in a fashion which easily conveys to the reader the author's meaning.

We have pleasure in endorsing it as likely to be of use to the dermatologist and the general practitioner.

Tropical Diseases: A Manual of the Diseases of Warm Climates.

By SIR PATRICK MANSON, G.C.M.G., M.D., LL.D. Fifth Edition.
London: Cassell and Co. 1914.

A WORK so well known as Sir Patrick Manson's *Tropical Diseases* needs no commendation on the appearance of a new edition. Yet the rapid advance of protozoology and of parasitology has in the past few years cleared up many of the problems which these diseases until recently presented, and it is therefore necessary to take note of the principal alterations in the present edition. The text, as a whole, has undergone complete revision, and this has led to a considerable increase in the thickness of the volume, which, however, it is still possible to hold comfortably in the hand. The principal changes are to be found in the sections devoted to etiology and pathology. The discovery that kala-azar is to be met with on the Mediterranean littoral and also in South America, the biological evolution of the trypanosome within the body of *Glossina palpalis*, the existence of trypanosomiasis in South America, the transmission of three-days' fever by the bite of a phlebotomus, the spirochætal origin of yaws, the dietetic origin of beri-beri, and many other recent discoveries find their due place in the pages of the fifth edition.

Advances in treatment have also been numerous, and among them may be mentioned the treatment of trypanosomiasis by antimony, and that of amœbic dysentery by emetine. The appendix on protozoa has been brought into conformity with British teaching by Dr. Philip Bahr, who has also revised the nomenclature of the parasites. The numerous and excellent illustrations form a feature of the volume, which in its present form will be more than ever indispensable to all who are concerned with tropical diseases.

Ulcer of the Stomach. By CHARLES BOLTON, M.D., D.Sc., F.R.C.P. London: Edward Arnold. 1913.

THIS monograph upon ulcer of the stomach is the result of ten years' careful and laborious investigation of the subject from the point of view of experimental pathology and of morbid anatomy, as well as from that of clinical medicine. The data afforded by these different methods, both to Dr. Bolton's own researches and to those of other workers, have been so correlated by the author as to bring them into the form most serviceable to the physician, who, in this volume, is put in possession of all the information in regard to gastric ulcer that can in any way be profitable to him. Dealing first with the question of etiology, under which are discussed the various conditions of age, sex, and associated morbid states in connection with which gastric ulcer is most commonly found, the author next treats with great fulness the morbid anatomy and the general pathology of the disease. He illustrates his description of the appearances found in acute and chronic ulcer by a series of photographs which give a double value to his observations, and he then passes to an account of his experimental investigations. He shows that acute ulcer is preceded by local necrosis, local hæmorrhage, or inflammation of the lymphatic follicles, and that digestion of the devitalised tissue follows. Local necrosis may be produced in various ways—by bacterial infection, cutaneous burns (toxæmic necrosis), or by metabolic poisons. Working with gastrotoxin, a substance produced by immunising an animal with the gastric cells of another animal, he has shown that "a poison of metabolic

origin which circulates in the blood may be capable of initiating self-digestion, and the actual death of the cell is not a necessary antecedent to such digestion." Such a process is aided by hyperacidity of the gastric juice. Occlusion of arterial branches is only a rare cause of ulcer of the stomach, and the idea of a trophic origin of such ulcers is purely fanciful. There is much evidence in support of the acute origin of chronic ulcer, and the effect of alterations in the gastric juice in retarding the healing of acute ulcer is important in this respect.

Symptomatology is next discussed, and the subject is amply illustrated from the writer's abundant clinical material. For those to whom the old symptomatic triad of epigastric tenderness, pain after meals, and hæmatemesis is necessary for a diagnosis, this section of the book will prove wonderfully illuminative in its revelation of atypical forms, and of the transition by which the symptoms of acute shade into those of chronic ulceration. Although it is possible, broadly speaking, to say that acute ulcer is frequently symptomless until it reveals itself by hæmorrhage or perforation, and that the typical symptoms are those of chronic ulcer, it is impossible to draw a definite line between the two, or clinically to recognise a point at which an ulcer has become chronic. Further, Dr. Bolton's extensive observations give no support to Mackenzie's statement that the position of the ulcer can be localised by the seat of the area of tenderness.

The subjects of diagnosis, prognosis, and treatment, the complications and the late effects of ulcer are fully and ably dealt with, and the work, from beginning to end, forms the most adequate presentment of the disease that is to be found in the English language.

Saint Thomas's Hospital Reports. New Series. Edited by Dr. J. J. PERKINS and Mr. C. A. BALLANCE. Vol. XLI. London: J. & A. Churchill. 1914.

THIS volume of the *St. Thomas's Hospital Reports* consists of a series of tabulated statements of the cases dealt with in the various departments of the Hospital during the year 1912, and of analytical descriptions appended to the tables. It also

includes an account of the new preparations added to the pathological museum during the year. It is the custom of St. Thomas's Hospital to draw up its Reports upon these lines, and such a system undoubtedly makes a large annual increment to the mass of statistical material now available in the domain of therapeutics. The only disadvantage of the method is that it necessarily limits the circulation of the annual volume to hospital statisticians and to members of the hospital school; but to both these classes of readers the information contained in the forty-first volume will be found of much interest.

The Psychoneuroses and their Treatment by Psychotherapy.

By Professor J. DÉJERINE and Dr. E. GAUCKLER. Authorised Translation by SMITH ELY JELLIFFE, M.D. London: J. B. Lippincott Company. 1913.

THE translator of this work has done a very considerable service both to psychotherapy and to medicine. The subject of the psychoneuroses is too much neglected in this country, with the result that many whose troubles are purely neurotic in origin become the victims of erroneous diagnoses of organic disease, and may thus be condemned to a life of apprehension, or be subjected to unwarrantable operative interference. Every one knows, in a general way, that the so-called "functional" affections of the nervous system may simulate almost any form of organic disease, but comparatively few are aware precisely how these affections manifest themselves, and fewer still have any clear conception of the nature of the psychoses. On these questions the book which Professor Déjerine has written, with the assistance of Dr. Gauckler, will throw a flood of light. Their volume is divided into three parts, the first being an analytical study of the various functional manifestations as they effect the different organs of the body, the second a synthetic study of the psychoneuroses as a whole, and the third being devoted to a general and particular consideration of psychotherapeutics. It is impossible in any brief review to do more than indicate the content of a work so elaborate, but those who are familiar with the other writings of Professor

Déjerine will know what to expect from such a master of his subject, while those who are not may be assured that they will find the volume as attractive as it is illuminating. One of the authors' cautionary observations is of such general application that attention may be called to it even in this short notice. It is to the effect that many neuropaths are made so by specialists. The gastric specialist, for example, looks for and asks for symptoms that the patient has not complained of, fixes his or her attention upon them, and a false gastropathy is the result. The observation is one which any experienced physician can verify from his own cases, and it deserves to be carefully borne in mind by those who have to do with patients of a nervous habit.

Aids to Forensic Medicine and Toxicology. By WILLIAM MURRELL, M.D., F.R.C.P. Revised by W. G. AITCHISON ROBERTSON, M.D., D.Sc., F.R.C.P.E. Eighth Edition. London: Baillière, Tindall & Cox. 1914.

THE eighth edition of this little manual has been thoroughly revised and brought up to present requirements. Additions have been made to the text and there has been some rearrangement of the matter. The result is a very useful aid to the subject, in which the essentials are placed before the student in a clear and concise fashion.

A System of Surgery. Edited by C. C. CHOYCE, B.Sc., M.D., F.R.C.S. Volume III. London: Cassell & Co., Limited. 1914.

IN the third volume of his *System of Surgery* Mr. Choyce has associated with him some fourteen other specialists who each contribute one or more sections of the work, while Dr. J. Martin Beattie acts as Pathological Editor.

The editor has evidently taken considerable trouble in adjusting the sectional arrangement of the volume as, while some diseases are easily grouped according to anatomical systems, others, for closer relation to practice, have to be considered

according to regions as determined by our arbitrary "specialties." Thus the cardio-vascular system lends itself at once to anatomical classification of diseases, but diseases of the ear, throat, and nose, fractures and orthopædic surgery, demand sections for themselves with no regard to fundamental bodily systems.

Each contributor has confined himself to the branch which lies well within his own special sphere, and thus the student or practitioner who refers to any section must feel that he is seeking the advice of a master of the subject.

The volume is a neat production, clearly printed, with numerous and excellent illustrations, some of which are in colour.

As a sound work of reference for both the specialist and the general practitioner it has our unqualified commendation.

A War Cookery Book for the Sick and Wounded. By JESSIE M. LAURIE. London: T. Werner Laurie.

ON the title-page it is stated that this book is compiled from the cookery books by Mrs. Edwards, Miss May Little, &c., &c. It is not a large book (there are 181 formulæ for various dishes), but the feeling conveyed by it is that in the case of a number of the articles of diet mentioned the cook would require much time and a fairly deep purse in order to carry out the directions. On the whole, it cannot be said that the compilation is quite satisfactory in view of the purpose for which the book is advanced.

Spectrum Analysis applied to Biology and Medicine. By C. A. MACMUNN, M.A., M.D. London: Longmans, Green & Co. 1914.

THE late Dr. MacMunn, whose investigations in the field of spectrum analysis have always taken a high place, was an active member of that comparatively small band of practising physicians who devote their spare time to scientific research. The present small volume under review contains his final

results on the study of the pigments, although, unfortunately, he did not live to revise the work. The difficult task of revision and completion of the MS. has been carried out by Dr. Milroy, of Belfast.

The book ranges over a very wide field and certainly displays the width of the late author's interest. It opens with a very excellent account of the spectroscope, and then it deals with the characteristics of the various pigments chlorophyll, hæmoglobin, hæmatin, bile, &c., and with fluorescence and phosphorescence. There is also a good description of the methods of quantitative spectrum analysis.

The book is a mine of interesting information, although, owing to the fact that it is made up of the incomplete notes left by the author, in many places it lacks cohesion and unity. It is well got up and is abundantly illustrated.

Unser Wissen über die sekundären Geschlechtscharaktere. Von Dr. R. HOFSTÄTTER. *Centralblatt für die Grenzgebiete der Medizin und Chirurgie.* Jena: Verlag von Gustav Fischer. 1913.

THIS elaborate study of secondary sexual characters forms a special number of the *Centralblatt* referred to in the title, and constitutes a critical review of the whole literature of the subject. The magnitude of this literature may be estimated by the fact that the bibliography prefixed to Dr. Hofstätter's volume extends to 116 pages, and includes 2,324 entries. His work, the laborious industry of which is deserving of all praise, unites in one volume everything essential that is known on the subject, and will be found an indispensable guide to its literature by those who are familiar with the German language.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

M E D I C I N E.

Disseminated Sclerosis. By Joseph Collins, M.D., and Edmund Baehr, M.D. (*American Journal of the Medical Sciences*, October, 1914).—This paper deals with the clinical observation of 91 cases of disseminated sclerosis, in which the diagnosis was made after careful deliberation. The authors find that the disease is met with much less frequently in America than elsewhere. This is only partly due to the fact that early and irregular cases frequently escape recognition there. The fully developed, classical Charcot type of the disease is rarely seen. Trauma, including occupation, injury, intoxications, biological crises, mental shocks, &c., plays only a contributing rôle in the etiology. The disease is regarded by the authors as a parenchymatous degeneration, due to the action of a toxin circulating in the cerebro-spinal fluid. There can be no rigid grouping of "types" of the disease. Nevertheless, three general groups can be assumed: a spastic-paretic, an ataxic, and a hemiplegic group. The best single aid in the differential diagnosis is the condition of the cerebro-spinal fluid. The Wassermann reaction is practically always negative. The number of lymphocytes is less than fifteen, and there is no excess of globulin. This is of special value in ruling out syphilis. The characteristic remissions, which sometimes occur, were rarely encountered in the authors' series. The absence of the abdominal reflexes, upper and lower, is an important diagnostic sign.

—ARCHD. W. HARRINGTON.

The Normal Differential Leucocyte Count. By Sydney R. Miller, M.D. (*Johns Hopkins Hospital Bulletin*, October, 1914).—The author, with the aid of his students, has made a large number of examinations of the leucocytes in normal blood. He draws the following conclusions from his work:—

1. The total leucocyte count and differential formula in normal individuals are subject to relatively wide variations, which must be considered in the interpretation of studies made upon the bloods of individuals presumably suffering from abnormal conditions.

2. The interpretation of any differential count should be based upon (a) a knowledge of that particular individual's normal blood picture, when possible;

(b) the average values for the locality in which that individual resides; (c) a consideration of those factors peculiar to the individual which might modify that particular blood.

3. Differential leucocyte counts should always be reported in terms both of percentage and absolute numbers per cubic millimetre, and, in all cases, where possible, more than one differential count should be made, especially in borderline cases, in which slight changes are to be regarded as of diagnostic or prognostic value.

4. The tendency to ascribe a diagnostic value to lymphocytosis is probably overdone. Only when the mononuclear elements constantly exceed the average percentage, absolute values, and upper limits of variation (35-40 per cent) for the community, and when all modifying factors are considered, should one attempt to draw valuable conclusions from the figures obtained.

—ARCHD. W. HARRINGTON.

SURGERY.

Bone Transplantation with Autogenous Sliding Grafts and Bone Nails. By Raymond C. Turck (*American Journal of Surgery*, November, 1914).—The operation described by this author is intended principally for the treatment of ununited fractures, more particularly of the tibia, though it may be found quite applicable to many cases of fresh fracture. The early part of the article contains a detailed account of the preparations and technique carried out by the author, and then follows the description of an average operation.

When the bone has been cleared of soft tissues the wound edges are held apart by self-retaining retractors, and if there is excess of callus this is cut away. The bone ends are now elevated and trimmed until they approximate nicely. Out of the large fragment a long and shallow wedge transplant is cut, and the medullary canal of this fragment, thus exposed, is chiselled out. The canal of the shorter fragment is reamed out. The operator now slides the transplant partly into the lower fragment, while the remainder of its length lies snugly in the gutter of the upper fragment. Fixation of the graft is secured by the insertion of bone nails which have been fashioned from the tibia at the same time as the wedge was cut.

The procedure aims at rendering the use of unabsorbable materials unnecessary.—CHARLES BENNETT.

The Exploration of the Knee-Joint. By Edred M. Corner (*The British Journal of Surgery*, October, 1914).—In this article the author describes a method of opening the knee-joint from the front, an extension of the operation advocated by Robert Jones and Alwynne Smith.

An incision is made in the middle line from 3 inches above the patella to the tubercle of the tibia. All soft tissues are divided in the line of the original incision, and the patella is halved by a saw or, preferably, a chisel. The cavity of the knee-joint is made up of two principal chambers separated one from the other by the ligamentum mucosum and the ligamenta alaria together acting as a

diaphragm. The anterior compartment is subdivided incompletely into two by the patella. When the ligamentum mucosum has been detached from the femur, and the halves of the patella retracted, every corner of the joint can be explored. An interesting contribution to the physiology of the joint by this author is that both crucial ligaments are tight in flexion and in extension, while only in semi-flexion are they relaxed.

A large part of the communication is devoted to describing cases illustrative of the value of the anterior operation in disease, as well as traumatic conditions of the knee-joint.—CHARLES BENNETT.

DISEASES OF THE EYE.

Invasion of the Human Eye by the Living *Filaria Loa*.—Drs. Terrien and Prélât record another instance of the invasion of the human eye by the living *filaria loa* (*Archives d'Ophthalmologie*, May, 1914).

In this instance the worm apparently lived in and round the orbit, and frequently passed over the eyeball under the conjunctiva or in the tissue of the upper eyelid. Seemingly it had occupied this "habitat" for upwards of six years, and had grown to be 50 mm. long. It caused the patient little or no discomfort, and it may be supposed that the host was rather sorry to part with his associate.

It is recorded in several instances that this or similar other *filaria* may, as *microfilaria*, gain entrance to the eyeball, and live there in comparative comfort. It is well known that horses in India and other places frequently have incursions of worms into their eyes, and the owners do not hesitate to remove them by slitting the eye open with a pocket knife.—LESLIE BUCHANAN.

"**Iritis, Rheumatic and Toxic,**" is the title of a paper in the Ophthalmic Section of the Royal Society of Medicine of December, 1913, and as it is by a writer whose experience of this branch of the subject must be exceptional, it is worthy of perusal.

Being an ophthalmic surgeon of great experience, and residing in the "Mecca" of rheumatic patients, Bath, one would say that Beaumont had opportunities for judging as to the etiology of iritis in numbers of cases which are denied to others. Yet this is what he tells us:—"In 17,197 cases of chronic rheumatism and rheumatoid arthritis admitted into the Royal Mineral Water Hospital, Bath, I saw, by permission of the staff, in twenty years only twenty cases of acute and sub-acute iritis."

As may be judged from this, the present paper is a plea for the reconsideration of the labelling of iritis. It is pointed out that in many cases the iritis has association, often late, with gonorrhœa, and that the "rheumatism" may similarly have its origin in urethral infection. The iritis is really toxæmic, and the fibrositis likewise is the result of toxins from the gonococcus carried by the circulation to parts in which they can give rise to inflammatory manifestations. Otherwise "rheumatic" pains may be the result of toxæmia from dental disease or other source of infection. Faulty assimilation from the intestines also may

give rise to various inflammatory conditions, which we, for want of a more exact name, term rheumatic.

Our older writers gave us the name "rheumatism" as signifying, apparently, that there was "something" flowing through the tissues which should not have been there. Seemingly we are not very much further forward than were the "ancients" in our knowledge as regards what this "something" is.

—LESLIE BUCHANAN.

"The Action of the Lead of Copying-Ink Pencils on the Membranes of the Eye" is the title of a paper by Haas in the *Archives d'Ophthalmologie* of May, 1914, and, as this subject is comparatively new, a few notes on the matter may be of interest.

The case recorded by Haas is probably one of the most severe of the various injuries seen within the last two or three years, and so is a fitting subject for a note.

In this case a portion of the "lead" of a copying-ink pencil, name unrecorded, found its way into the inferior *cul-de-sac* of a young man. The patient went to the surgeon two hours later, and even then the corneal epithelium was desquamating, and the conjunctiva, ocular and palpebral, was notably œdematous, and even ecchymotic.

The eye, after removal of the fragment of "lead," did well for some days, but marginal ulceration of the cornea appeared, and a considerable amount of trouble was experienced in inducing the eye to become quiet again. Eventually, however, all went well.

In this case, then, possibly the worst effect of the type of accident is manifested. The least effect is rather common, and is seen as a violet spot on the conjunctiva of the globe. This causes no pain and no redness. It is the result of a tiny fragment of the copying-ink "lead" being carried into the eye, where, being dissolved in the natural lacrymal secretion, it stains the conjunctiva. The stain is gradually absorbed, and all evidence of the accident passes away.

Slightly more severe is the case where a sharp angular portion of the "lead" gains access to the conjunctiva, and penetrates at all events its superficial layers. Here a large area of staining of deep violet colour is the result, and there is usually some irritation of the conjunctiva.

When the spicule is removed the little wound heals rapidly, and the staining rapidly passes away.

In one case seen by the writer of this note a complication was seen. The amount of dissolved colouring matter was so great that the secretion from the nostril on the affected side was of violet-blue colour. This was the first evidence to the patient that anything was wrong, and it was only whilst examining as to the cause of this, before her mirror, that the patient (a typist) discovered the staining of the conjunctiva.

The condition is becoming rather frequent, as has been stated, and this is largely the result of the ordinary use of copying-ink pencils for signing papers, &c., which has become so common within the last few years.

Haas got one of his colleagues in the university to analyse the piece of "lead," and found that it was hexa-methylen-violet in an inactive clay vehicle.

The writer does not say which make of pencil was used in his case, nor do any of the writers whose cases have come under the reviewer's notice.

The cases, five in number, seen by the reviewer within the past two years have been caused by lead from "Mephisto" pencil in 2 cases, "Venus" pencil in 2 cases, "Koh-i-noor" pencil in 1 case. It is to be observed that this is purely accidental, however, and that it is not the pencil which is at fault but rather the user.

In some cases the point of the "lead" breaks off when the pencil is being sharpened and blows into the eye, or otherwise dust of "lead" is blown into the eyes.

In one case recorded by Brown in *Ophthalmology* two schoolgirls put fragments of such "lead" into the eyes and induced staining "for fun."

—LESLIE BUCHANAN.

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Nietzsche, by J. M. Kennedy. London: T. Werner Laurie, Limited. 1914. (1s. net.)

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Text-Book of Massage and Remedial Gymnastics, by L. L. Despard. Second edition. London: Henry Frowde and Hodder & Stoughton. 1914. (12s. 6d. net.)

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Surgical Materials and their Uses, by Alexander MacLennan, M.B., C.M.Glasg. With 277 diagrams and illustrations. London: Edward Arnold. 1915. (4s. 6d. net.)

A Nursing Manual for Nurses and Nursing Orderlies, by Duncan C. L. Fitzwilliams, M.D., Ch.M., F.R.C.S. London: Henry Frowde and Hodder & Stoughton. 1914. (6s. net.)

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GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDED 19TH DECEMBER, 1914.

	WEEK ENDING			
	Nov. 28.	Dec. 5.	Dec. 12.	Dec. 19.
Mean temperature, . . .	42·1°	44·1°	41·4°	41·2°
Mean range of temperature between highest and lowest,	8·5°	9·8°	6·4°	8·0°
Number of days on which rain fell,	6	6	5	5
Amount of rainfall, . ins.	1·25	3·40	0·64	0·77
Deaths (corrected), . . .	397	384	371	380
Death-rates,	19·8	19·1	18·5	18·9
Zymotic death-rates, . . .	2·1	2·1	1·9	2·0
Pulmonary death-rates, .	5·3	5·8	5·8	5·0
DEATHS—				
Under 1 year,	91	88	107	110
60 years and upwards, .	103	77	76	91
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	1	2	2	1
Scarlet fever,	13	6	9	11
Diphtheria,	3	7	5	3
Whooping-cough, . . .	22	25	24	24
Enteric fever,	1	1	1	1
Cerebro-spinal fever, . .	...	...	1	1
Diarrhoea (under 2 years of age),	6	4	3	6
Bronchitis, pneumonia, and pleurisy,	88	88	92	93
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Cerebro-spinal meningitis, .	...	...	1	2
Diphtheria and membranous croup,	33	35	43	29
Erysipelas,	32	33	35	40
Scarlet fever,	162	163	139	140
Typhus fever, . . . . .	...	...	...	...
Enteric fever,	13	7	6	11
Phthisis,	25	45	67	68
Puerperal fever, . . .	5	2	3	2
Measles,*	31	15	24	19

* Measles not notifiable.

THE
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ORIGINAL ARTICLES.

LEPER HOUSES AND MEDIÆVAL HOSPITALS.*

By CHARLES A. MERCIER, M.D., F.R.C.P.

LECTURE II.

IN the last lecture I said that the leper house partook of the nature of the prison, the monastery, and the almhouse. With the prison aspect I have dealt, but this, although it was no doubt an important consideration in the minds of the founders of leper hospitals, was by no means paramount over the second, that of creating a monastic institution. This was by no means peculiar to leper houses. Many hospitals founded in the Middle Ages had churchmen at their head, and all, without exception, were monastic or semi-monastic in their constitution. The obvious explanation is that in times when there was no Guarantee Society to ensure the faithfulness of the almoner of charitable funds, the pious founder was compelled to rely upon the honesty of the person in charge, and there was a manifest safeguard in entrusting the duty to one who had taken the vow of poverty, and had bound himself to live what is now known as the simple life. This is the obvious explanation, but I believe that, like most obvious explanations, it is

* Being the "FitzPatrick Lectures," delivered before the Royal College of Physicians, London.

erroneous, or at least insufficient. It is scarcely possible for us in these days to appreciate how very large a part the Church filled in the lives of our ancestors. It might have been said of it, as was said of another matter, that

“It attends upon man with his earliest breath,
Assists him at birth and awaits him at death,
It presides o’er his happiness, honour, and health,
Is the prop of his house, and the end of his wealth,”

and in other things occupied a very large share of his time and attention. The chief industry was the tilling of the soil, and not only was one-third of the whole land of the country in the hands of the Church, but at every gathering of the produce of the earth the husbandman must set apart one-tenth as the Church’s fee. The very calendar was reckoned, not by the days of the month, but by the feasts of the Church. A date was recorded, not as the 16th of June or the 11th of August, but as the eve of St. Alban or the morrow of St. Lawrence. The priest combined in himself all the learned professions. At anyrate in rural districts, he was not only the priest, but the only available lawyer and physician. When the layman was sick, the priest heard his confession, and exhorted him to benefit the Church by his will. Then, that there might be no backsliding, the priest took on a new character, and as a lawyer drew his client’s last will and testament. Assuming his function of physician, he then put his patient to death, and finally, resuming his legal character, he proved the will in the ecclesiastical court. The reason why every hospital had a monastic constitution was, as I take it, that it never occurred to the pious founder that it could have any other. It was as natural, as proper, as inevitable to him to provide a monastic framework for his charity as it is to us to provide physicians and nurses. No additional motive was needed, but if an additional motive had been needed, it would have been found in the provision, so often made, for a constant succession of prayers for the soul of the founder. In fact, with some hospitals, such as that founded by the celebrated Richard Whittington, thrice Lord Mayor of London, this was frankly the main object of the foundation. By his will, Whittington founded a college of priests and clergyman, and a hospital for thirteen poor people;

and here I may remark in how very many cases the recipients of the benefits of the hospital were to be thirteen, a number fixed, no doubt, on the model of Christ and his disciples. In Whittington's Hospital, not only the clergy, but the thirteen poor also were to have seats appointed to them in the said church and college, and they were obliged to be daily there at matins, mass, evensong, compline, and other canonical hours, and to offer up their prayers for the souls of Richard Whittington and his wife Alice; and each of them also at rising and going to bed to say on his knees a pater and an ave for the souls of the said Richard and Alice; and at other times when they shall have leisure (by no means an unnecessary proviso, for when the hours of church service and of meals had been deducted there must have been very little of the day left), to say for the said souls three, or at least two, psalters of the glorious Virgin Mary, viz., thrice fifty angelical salutations, with the Lord's Prayer fifteen times; likewise they all daily, after mass or compline, were "to meet at the tomb of the said Richard Whittington and his wife Alice, and there to say the psalm *De profundis* for their souls, if they know it; and those who do not, to say devoutly three paters and three aves and the creed; and then the tutor, or one of the eldest of the poor to say aloud in English *God have mercy on our Founders' souls and all good Christon*, and the other poor to answer *Amen*." It seems, therefore, that Richard Whittington took every precaution that was humanly possible to secure for himself and his wife a prosperous hereafter; and it looks as if the charity that he bestowed upon the thirteen poor persons began in a special sense at home.

Even when the object of the foundation was primarily charitable, it was apt to become overlaid with ecclesiastical functions. The pious, ancient, and wealthy nunnery at Barking founded (about 1150) a leper house at Illeford, and Baldock, Bishop of London in 1346, directs "that the lepers omit not attendance at divine service unless prevented by grievous bodily infirmity; they are to preserve silence there, and to hear matins and mass throughout if they are able, and while there to be intent on prayer and devotion. Every leper shall say every day for morning duty a paternoster and an ave thirteen times, and for the other hours of the day respectively, viz., the first,

third, and sixth hours, the hour of vespers, and again at compline, a paternoster and an ave seven times; and besides the aforesaid prayers, each leprous brother shall say a pater and an ave thirty times every day for the founders, and for the bishop, and for all benefactors to the hospital, and for all true believers, living and dead; and on the day on which any of the brothers depart this life, let each brother say in addition fifty paters and aves three times for the souls of the departed and of all deceased true believers. And if anyone shall openly transgress the said rules, for each transgression let him suffer punishment according to the gravity of his offence from the Master, but if secretly, let him be dealt with by the priest in the penitential court."

At the Hospital of St. John the Baptist at Coventry, founded about 1221, the regulations, after prescribing the dress of the brethren and sisters, provide that the master, chaplains, and brothers are to say the divine office according to the use of Sarum, the lay brothers and sisters to say other prayers in lieu thereof, and at the end, almost as an afterthought, the sisters are enjoined to be intent on serving the sick.

At St. Leonard's Hospital at York it was ordered that every learned chaplain should have a desk in the cloister, and all be present at matins and other hours; that at least four brothers besides the priests should assist at the mass of the Blessed Virgin; and after having said all their masses, to be at the cloister at prayers; how they should behave themselves in the choir; that one should read at their meals; that in summer they should sleep a little after dinner, and then read; that after supper they should go to church to give thanks and say compline; that silence should be observed in the cloister, refectory, and dormitory; that if anyone happened to be incontinent, or disobedient, or hold anything of his own, none should absolve him but the Master, unless at the point of death; if any should at his death be found to have anything of his own, to be denied Christian burial. At St. John the Baptist's Hospital at Nottingham, under the same circumstances, the offender was not only to be denied Christian burial, but also at his burial without the rites of the church the brothers were to cast on his body what he had, saying, "*Thy money be with thee to perdition.*"

It appears, therefore, that the hospital was usually, like the college, a third order of religious house, inferior in dignity to the priory as the priory was to the abbey; and just as some of the great priories, though inferior in dignity, were of greater numbers and wealth than many smaller abbeys, so some of the great hospitals, such as St. Bartholomew's in London and St. Leonard's at York, were of greater wealth than many priories.

Still, though comparatively few hospitals were founded for the reception of the sick; though every hospital, whatever its purpose, had a strong monastic flavour, and was administered either by lay brothers, usually with a priest at their head, or by canons, either secular or regular; and though every hospital was thus to a great extent a monastic establishment; yet it seems that every hospital had in addition some charitable purpose which entitled it to its name. A very large proportion of them, especially after the cessation of leprosy, were almshouses for the support of the poor and the infirm, a smaller proportion for the treatment of the sick. What proportion the religious purpose bore to the charitable purpose may be estimated from the case of Whittington Hospital, already cited, and from that of the Hospital of the Blessed Virgin Mary in Leicestershire. This hospital was founded in the time of Edward III, in the year 1330, by Henry, Duke of Lancaster, for one Master and certain chaplains, and endowed for the maintenance of the said persons and of the poor ordained by him to be received there. "This," says the chronicler, "was a sumptuous monastery, entirely built by the said Duke for canons regulars, with an hospital well disposed and distinguished for men and women, and so well provided for that no hospital in England was more commodious." We may well believe this, for its inmates were a dean, twelve canons prebendaries, twelve vicars, with other necessary attendants, as also ten infirm poor people and ten lusty women to serve the infirm. It seems an intolerable deal of ecclesiastics to a poor half-pennyworth of infirm.

There were many monasteries in England in Saxon times, and there seems to be no doubt that Glastonbury dated back to the times of the Romans, and no doubt others existed before the Saxons set foot in this country. Every completely equipped monastery had its *infirmarium* for such monks as suffered from illness, and the amenities of their building were

probably shared by travellers who arrived at the monastery exhausted or sick. These were the first buildings set aside in this country exclusively for the treatment of the sick, but we have no record of any hospital having been founded in this country in Roman times, nor of any in Saxon England until the whole country was united under Egbert. It was in the reign of his immediate successor Athelstan that the first hospital, *eo nomine*, was founded in England. This was the Carman's Spittle at Flixton, in the parish of Folkstone, in Hertfordshire in Yorkshire, and was founded by one Acehorne, lord of Flixton, for one alderman and fourteen brothers and sisters, for the preservation of people travelling that way, that they might not be devoured by wolves and other wild beasts abounding there. There is still a hamlet called Flixton in the East Riding of Yorkshire, six miles south of Scarborough, but there is no Folkstone and no Hertfordshire in that county now.

The original purpose of the Carman's Spittle was soon superseded, for we find shortly afterward (it must have been shortly, for Athelstan reigned only sixteen years) that travellers in Yorkshire might pursue their journeys without danger of being attacked by wolves. Thus says the chronicle:—

“Athelstan having subdued Howel King of Wales and Constantin King of Scotland, restored to them their kingdoms, saying that it was more honourable to make a king than to be a king. Constantin revolting, Athelstan on his way to Scotland made vows to St. John of Beverley and St. Peter at York, leaving his knife in pawn upon the altar, that if they obtained him victory by their intercession, he would at his return bestow possessions on those churches.” Accordingly, upon his return after a victorious campaign, he erected at Beverley a college of secular canons, and renamed the town “the Town of St. John in Scotland,” giving it many lands and privileges. “At York he found at the church of St. Peter's men of holy life and godly conversation, then called Colidei (Culdees), worshippers of God, who maintained many poor, and had little to live on. He granted to them and their successors for ever, for the better maintenance of the poor and support of hospitality, one sheaf of corn of every plough throughout the bishopric of York, which was afterward called Peter Corn. It is to be observed that the said sheaves were then in the king's gift, these having been

given him upon condition that he should destroy the wolves, which at that time were so numerous in those parts that they devoured the cattle; and they were accordingly quite extirpated by King Athelstan." By a plough is probably meant a hide, that is to say, as much land as one plough could plough in a year, or from 100 to 120 acres, as usually estimated.

The Colidei built upon a piece of waste land, which the king gave them in addition to the Peter Corn, a little hospital for the poor that came to York, assigning to them those sheaves, and appointing one of their number to govern the said house. King William the Conqueror confirmed both grants, as did William Rufus, who removed the hospital to certain houses of his own. It held the name of St. Peter's Hospital to the reign of King Stephen, who built a church for the hospital, to the invocation of St. Leonard, and from that time it was called St. Leonard's Hospital, and still remained possessed of the Peter Corn, the grant of which was confirmed by many subsequent kings and by sundry popes, particularly Adrian IV in the year 1156. The hospital remained in existence down to the time of Henry VIII, and at the visitation in the year 1536 was the wealthiest hospital in England, its revenues amounting to £362, 11s. 1½d., actually more than those of St. Bartholomew's Hospital in Smithfield, which were only £305, 6s. 7d. The ambulatorium of St. Leonard's Hospital still exists at York, and its funds still dispense charity to the poor.

It is said that St. Oswald's Hospital at Worcester, which still exists as a charity, was founded by Bishop Oswald, who died in 992. This would make a third hospital founded in Saxon times. It was a leper house.

The first hospital for the sick, not being leprous, ever instituted in this country was founded in the time of William the Conqueror by Archbishop Lanfranc, who built without the North Gate of Canterbury a large and decent stone house, containing many habitations in it, with a court dividing it into two parts, one for men labouring under several diseases, and the other for such women. He also appointed their diet and clothing, and proper persons to attend, that they might want for nothing, and endowed them with certain lands. The term "several diseases" was used to make it clear that the hospital was not for the one disease, leprosy, for which most hospitals

up to that time had been founded. Lanfranc made separate provision for lepers by founding the leper hospital at Harbledown, not far from Canterbury. The Dean of Canterbury courteously informs me that Lanfranc's Hospital of St. John the Baptist still exists in that city, still supports several old men, and is still governed by an ecclesiastic, who is a canon of the Cathedral. Its purpose has been diverted from a hospital for the sick to an almhouse, but it is the oldest hospital now existing in England, and has a continuous history of more than eight hundred years.

Lanfranc's example was soon followed. He died in 1089, and before the end of the eleventh century three other hospitals had been founded in this country, one at Nantwich, one at Lewes, and one at Battle, in connection with the great monastery there. Before St. Bartholomew's in Smithfield was founded in 1123 there were already eighteen hospitals in England, and of these five are active charities at the present day, namely, St. Leonard's at York, the two founded by Lanfranc, St. John the Baptist at Ripon, and St. Bartholomew's at Chatham. St. Bartholomew's in Smithfield was the second general hospital for the sick, however. Its original objects were to maintain all poor sick persons resorting to it till they were well, and women with child till they were delivered, as also their children, when the mothers died, till they were seven years of age, besides several chantries, and other alms deeds, and, of course, the Master, brothers, and sisters.

In the first half of the twelfth century were founded at least 46 hospitals, of which 24 were leper houses. In the following fifty years at least 120, of which 56 were for lepers; in the thirteenth century no fewer than 240 hospitals were founded, 75 being leper houses. In the first half of the fourteenth century the leper houses fell to 42, while hospitals for other purposes were 69. Leprosy was now declining, and the Black Death swept the country in 1348-9, so that in the next fifty years leper houses fell to 20 and other hospitals to 117. From 1400 to 1450 no leper house was founded, though a few were constituted in the century following, and the number of hospitals for other purposes also declined to 91 in the whole of the fifteenth century. The total numbers of hospitals founded in this country in the Middle Ages was considerably

more than 700, and although some of these were small, and maintained only four or five inmates, others we know contained sixty or seventy, and St. Leonard's at York as many as two hundred and twenty. Now, in 1377 the population of London was 35,000, and in the whole of England there were probably not a million and a half of inhabitants. This, it is true, was less than a generation after the Black Death, which swept away from a half to two-thirds of the whole population, but even in the middle of the sixteenth century, when the Middle Ages may be considered to end, the population of England was certainly not more than three and a half millions, or half the number that is now contained by London alone, so that the provision made by our ancestors for their poor and sick was not ungenerous.

The objects of hospitals in mediæval times were various, and some of them appear to us whimsical. As already said, they were sometimes purely monastic, but usually some charitable purpose was tacked on to the foundation of lay brothers and lay sisters, and the majority were wholly or in part almshouses. In many cases the objects of charity were designated as the poor and infirm, sometimes as the poor and sick; in one case as poor, sick, and lame; in one as poor distressed people, blind, and other poor persons; and in many cases the entertainment of travellers formed a part, and in some formed the whole of the charitable object.

When a hospital was dedicated to the poor, the charity was dispensed sometimes—as at St. Nicholas, at Yarum—in the shape of meat, drink, and beds; sometimes—as at St. Marks, Billeswicke—in doles. At this hospital 100 poor were to be fed daily for ever, and each of the poor was to have a loaf of the weight of 45 shillings, with a sufficient quantity of pottage made of oatmeal, and the bread was to be of equal parts of bean flour and barley. For the administration of this dole were provided a Master and three chaplains, and the revenue at the time of the visitation was £112, 9s. 9d., or about £1,350 of present-day money.

Brackley Hospital, in Northamptonshire, was founded by Robert de Mellent, in the time of the Conqueror, for the safe custody of the founder's heart, which was preserved with salt in a casket of lead. In the eighth year of Henry V, Maud,

widow of John Lovel, pensioned off the brothers, and converted the hospital into a friary of thirteen friars preachers of the Order of St. Dominic.

William Percy gave to the Hospital of the Holy Ghost, at Sandon, certain lands and revenue, on condition that the brothers should keep a lamp and a candle of two pounds continually burning before the altar of the Blessed Virgin, where the heart of the said William Percy and the body of his wife Johanna lay, during the time that any mass was saying at any altar in the church.

Few hospitals limited their benefactions to any social class, but Basingstoke Hospital was founded by King Henry III for maintaining the ministers of the altar of Christ who were declining and growing weak, and there were several similar institutions in various parts of the country. From time to time we read accounts in the newspapers of persons found wandering in the streets who have wholly lost their memories, and know not who they are, where they live, or even their own names. We are apt to think that this is a purely modern occurrence, and that it arises in some unexplained way from the intensity of the modern struggle for life and the rapid rate and high pressure at which we live. It seems, however, that it was not unknown five and a half centuries ago, for Robert Denton, chaplain, in the forty-fourth year of Edward III (1371), purchased of the King for forty shillings a licence to found a hospital, in a house of his own in the parish of Berking, for the poor priests and other men and women in the city of London who suddenly fall into a frenzy and lose their memories, to reside in till cured. However, for some reason—perhaps from a scarcity of patients—Denton changed his mind, and in the second year of Richard II, gave the property to the Hospital of St. Catherine by the Tower.

William Elsing, in the time of Henry III, founded the College of Elsing Spittle, in honour of the Blessed Virgin, for one warden and four secular priests; and, in the same foundation, a hospital for distressed people. The warden and chaplains were to say the divine office daily in their surplices and amices, and also to say mass and the service for the dead. The warden was to find ten priests who could sing indifferently, besides the aforesaid four, to serve in the church and house, and

to give them each forty shillings a year, which would be equivalent to about £50 now; and, in regard that many poor people got their bread by the alms of good Christians, yet had no lodging to entertain them, the founder ordained that there should always be beds and rooms for one hundred blind and other poor wretched persons; and when one died, another should be chosen within a fortnight; and poor priests, either blind or afflicted with the palsy, to be preferred before all other wretched persons. When the beds or bedding decayed, the warden was to take care to have them mended, or new bought. Elsing Spittle was the first hospital for the blind established in this country. At a later date, the founder, fearing that the secular priests would not so zealously and exactly perform what he had enjoined, changed the said seculars into canons regulars. This alteration confirms the surmise I have already expressed as to the object of placing these institutions under the charge of men bound by canonical vows. The secular priests were, of course, under no vow of poverty. A similar change of secular priests into regular canons was made by the Bishop of Salisbury at Maiden Bradley Hospital.

The Hospital of St. Mary Magdalen at Ripon was for two chaplains to perform divine service; also that if any begging clergymen (meaning, no doubt, Franciscan Friars) or other needy persons should happen to travel or stray by the said hospital, they should therein be relieved one night with food and a bed, and be gone in the morning; and certain doles to the poor. This hospital is a good example of several of the characters of the old hospitals. Its primary purpose was ecclesiastic; it was originally a leper house, and when leprosy ceased was diverted to other purposes; its charity was dispensed in more than one way, and one of these ways was the entertainment of wayfarers. Many hospitals had this as a part or the whole of their function. To this day St. Cross, at Winchester, distributes a dole of bread and beer to all comers, and at Rochester is a hospital at which all wayfarers, excepting only thieves and proctors, may claim supper and a bed. Many mediæval hospitals maintained schoolmasters to give gratuitous education either to the inmates or to the children from the neighbourhood.

Such being some of the objects served by the mediæval

hospitals, we may now examine the regulations made for their governance, and the salaries and other means of support accorded to their inmates; and as many of these regulations were made by business men, we need not be surprised to find that they were often minutely particular.

At St. Bartholomew's at Oxford (1126) there were to be six infirm brothers, and two sound to take care of its business, each brother to have ninepence (now about 20s.) per week, and the Master, who was of course to be a priest, and to say mass daily, and administer the sacraments, six marks per annum, equivalent to about £50 at the present day.

At Newstede Hospital, near Stamford, the seven infirm poor persons supported there were to have necessary food and clothing, and seven beds for them to lie in, and all things thereunto belonging; and in case the revenues of the hospital increase, the number of the poor to be also augmented. (If this provision had been in the foundation deed of the hospital at Barchester, Trollope's charming novel, *The Warden*, could never have been written.)

At St. John the Baptist's Hospital at Nottingham, founded in 1247, all the brothers were to rise so early to sing matins that they might be ended before the break of day, and afterwards they were to sing the other hours at proper times. All of them to eat, clothe, and drink alike, and to eat flesh only three days a week, viz., Sundays, Tuesdays, and Thursdays. All to eat together in silence, unless necessity required them to whisper anything. All to lie in one dormitory in drawers and shirts, or such garments as they used instead of shirts. All to wear a regular habit of russet and black cloth; not to admit more brothers and sisters than were necessary to serve the sick; and so forth.

At Bolton Hospital, in Northumberland, the master was to furnish the three chaplains plentifully and lawfully with diet and clothes of the alms given or to be given, and all that remained over and above to be spent in entertaining the poor and travellers.

Queen Eleanor, dowager of Henry II, in 1273 directed that, at St. Catherine's by the Tower, after the religious services had been satisfied, every day in the year till the 16th of November there should be given to twenty-four poor 12d. each (this is

such an enormous and disproportionate sum that I am sure it is a misprint for $\frac{1}{2}$ d.—it would be nearly 30s. at the present day), and on the 16th of November, being the day on which King Henry died, one halfpenny each to a thousand poor. Six of the aforesaid twenty-four poor to be scholars to assist the chaplain in the church at divine service; when the revenues of the hospital increased, the numbers of chaplains, poor, clerks, and women to be augmented.

At the Knols almhouse or hospital at Pontefract, in 1385, the thirteen poor men maintained there were to have two servants to wait upon them, the master to have 20 marks (£160) for his maintenance, the chaplains 10 marks each, and the thirteen poor £34, 4s. 3d. to maintain them in meat and drink, viz., three-farthings a day each. The chaplains' remuneration would be equivalent to about £80 at the present time, in addition to lodging and probably board. The poor men would each receive the equivalent of 1s. 10d. per diem.

At Eveline Hospital, founded in 1448, one of the chaplains was to instruct the poor in religious matters, the other to teach them as a schoolmaster, and to have ten shillings, which would now be about £8, salary; the Master sixteenpence a week, equivalent to about a guinea now, and the other twelve poor thirteen pence, equivalent to 16s. 8d.

At St. Mary Magdalen at Rippon in Yorkshire, founded by an Archbishop of York to maintain a chaplain and all lepers born and bred in Ripschire, every leper was allowed a garment called rak, and two pair of shoes yearly, and every day a loaf fit for a man's sustenance, and half a pitcher of beer, a portion of flesh on flesh-days, and three herrings on fish-days. In process of time, no lepers coming to it, a dole was given at the feast of St. Mary Magdalen to every poor person coming, of one loaf worth a halfpenny, the quarter of corn being worth 5s., and one herring. The loaf would now be a tenpenny one. The hospital of the Annunciation at Nottingham (1400) was for the support of two chaplains and thirteen widows decayed with age and poverty. Each chaplain was to have 100 shillings a year pension, equal to £80 at the present day.

At Fosgate Hospital, York (1373), there was to be a Master, thirteen poor and infirm persons, and two poor clergymen teaching school, each of them to have fourpence (about 8s. 6d.)

a week of the Master, and if any brothers, sisters, or benefactors of the said hospital should come to poverty and desire a place among the poor in due season upon a vacancy, then such to be preferred before all others. The Master to be allowed ten marks (about £80) a year, which was thought sufficient for him, and therefore he was to apply no more to his own use, but what was over and above besides the maintenance of the poor to be justly laid up to increase the revenues of the hospital; and when the said revenues should arise to six marks (£48) per annum above the aforesaid expenses, then the Master to be obliged to receive another chaplain, and he to receive for his maintenance the said six marks per annum. If it should happen that the revenues of the hospital should increase, then the number of the poor to be advanced in proportion to the increase of revenue. Here, again, we see the ecclesiastical side of the establishment taking precedence of the charitable side. This hospital was originally a leper house, but in the reign of Edward III, no lepers coming to it, the foundation was altered.

The most elaborate directions of which we have record are those laid down by Michael, Abbot of St. Albans, for the leper house of St. Julian's in that city. They run as follows:—

Let every leprous brother receive from the property of the hospital, for his living and all necessities, whatever he has been accustomed to receive by the custom observed of old in the said hospital, namely, every week seven loaves, of which five shall be white and two brown, made from the grain as threshed from the ear; also every seventh week fourteen gallons of beer or eightpence for the same. Let him have, in addition to this, on the feast of All Saints, the feast of St. Julian, the Purification, the Annunciation, the Trinity, St. Albans, St. John the Baptist, the Assumption, and the Nativity, for each feast one loaf, one jar of beer or a penny for the same, and one obolus, which is called the charity of the aforesaid hospital; also let every leprous brother receive at the feast of Xmas 40 gallons of good beer or forty pence for the same. Also let each receive at the said feast his share of two quarters of pure and clean corn, which is called the great charity. Also at the feast of St. Martin, each leper shall have one pig from the common stall, and that there may be a fair division of pigs among the brothers, according to the custom observed of old, we desire that the

pigs according to the number of the lepers may be brought forward in their presence, if it can conveniently be done, otherwise in another place convenient for the purpose, and then each, according to his priority of entering the hospital, shall choose one pig (or in lieu he may have a sum of money equal to the value of the pig). Also each leper shall receive on the feast of St. Valentine, for the whole of the ensuing year, one quarter of oats. Also about the feast of St. John the Baptist two bushels of salt or the current price, also at the feast of St. Julian and at the feast of St. Alban one penny for the accustomed pittance. Also at Easter one penny which is called by them Flavonespan. Also on Ascension Day one obolus for buying potherbs. Also on each Wednesday in Lent, bolted corn of the weight of one of their loaves. Also on the Feast of St. John the Baptist four shillings for clothes. Also at Xmas let there be distributed in equal portions among the leprous brothers fourteen shillings for their fuel through the year, as has been ordained of old for the sake of peace and concord. Also, since by the bounty of our lord the King, thirty shillings and fivence have been assigned for ever for the use of the lepers, which sum the Viscount of Hertford has to pay to them annually at the Feasts of Easter and Michaelmas, we command that the said 30s. 5d. be equally divided among them in the usual manner; and we desire the brothers to be contented with the aforesaid distributions which have been accustomed to be made amongst the leprous brothers of old; but the residue of property of the said hospital we order and decree to be applied to the support of the Master and priests of the said hospital.

The leprous brothers are to humble themselves below all other men. They should wear a habit suitable to their infirmities, viz., a tunic and upper tunic of russet cloth, with a hood cut for the same, so that the sleeves of the tunic be closed as far as the hand, but not laced with knots or thread after the secular fashion. They are to wear the upper tunic closed down to the ankles, and a close cape of black cloth of the same length with the hood, as they have been accustomed of old. They are to wear stockings and flat shoes with the upper leather about their ankles. Those admitted must be single persons, or if married, to part by consent and vow

chastity; none to be admitted without passing through a noviceship; they are to love God above all things, and one another brotherly; all of them to be at church at the several hours, taking place according to seniority; none to go to church without his cloak, nor to walk about in the highway; none to stand talking under the pentice, but to repair to one another's chambers; none to go beyond the bounds prescribed but the keeper of the granges and barns; no brother to go into the bakehouse or brewhouse but he that has charge of them, and he not to touch anything, because persons under such a distemper are not to handle what is for the common use of men; none to go into the garden, fields, or highways without leave, to avoid giving of scandal; if any lies out all night, to be expelled the house; no woman to go into the lodgings of the brothers except the common laundress, and she to be of competent age; the brothers to be submissive to one another, and if any prove contentious, to be punished; no brother to make a will without the master's leave, &c. If any order was disobeyed, the culprit was to walk barefooted until the Master, considering his humility, said to him, "Enough."

At Shireburn Hospital in Yorkshire for sixty-five lepers the daily allowance of the lepers was a loaf weighing five marks and a gallon of ale to each; and betwixt every two one mess or commons of flesh three days in the week, and of fish, cheese, or butter on the remaining four days. On high festivals a double mess; and in particular on the feast of St. Cuthbert in Lent fresh salmon, if it could be had; if not, other fresh fish; and on Michaelmas Day four messed on one goose. With fresh fish, flesh, or eggs, a measure of salt. When fresh fish could not be had, red herrings, three to each mess (and it was especially enjoined that they, or aught that was served up, was not to be putrid nor corrupt, nor from animals that had died of disease), or cheese or butter by weight, or three eggs. During Lent each had a razer of wheat to make frumenty, and two razers of beans to boil; sometimes green meat or onions, and every day except Sunday the seventh part of a razer of bean meal, but on Sunday a measure and a half of pulse to make gruel. Red herrings were prohibited from Pentecost to Michaelmas, and at Michaelmas each received a razer of apples. The lepers had a common kitchen and a common cook, and fuel and utensils for

cooking, viz., a lead, two brazen pots, a table, a large wooden tub for washing or making wine, a laver, two ale vats, and two bathing vats.

In addition they had fire, candles, and all necessities, until they recovered or died. One of the chaplains was to hear their confessions, to read the Gospel to them on Sundays and holy-days, and to read the burial service for the dead. The old woman who attended on the sick had every week three wheaten loaves and one mess of flesh or fish; and when a brother or sister was buried, the gravedigger had his meat and drink. Each leper had a yearly allowance for his clothing of three yards of woollen cloth, white or russet, six yards of linen, and six of canvas, and the tailor had his meat and drink the day on which he came to cut out their clothes. Four fires were allowed to the whole community. From Michaelmas to All Saints' two baskets of peat on double mess days, and four baskets daily from All Saints' to Easter. On Christmas Eve four yule logs, each a cartload, with four trusses of straw. Four trusses of straw on All Saints' Eve and Easter Eve, and four bundles of rushes on the Eves of Pentecost, St. John Baptist, and Mary Magdalene, and on the anniversary of Martin de Santa Croce every leper received five shillings and five pence in money.

Such liberal allowances to so many inmates imply a considerable revenue, and, as we have seen, the revenues of some of the mediæval hospitals were considerable. They were derived for the most part from endowments, and the endowments, besides being often large, were of the most varied description. Most of them consisted of land, or of real property of one kind or another, for land with its appurtenances was the only permanent source of revenue. Some founders were so fervent in their piety as to grant to a hospital not only their own land, but the land of other people. For instance, Henry III granted to the Hospital of St. John without the gate at Oxford the garden of the Jews at Oxford, but he generously reserved to the Jews a competent place near it to bury their dead in.

Hospitals were sometimes endowed with manors. Heithsbury Hospital in Wilts had two manors of which it became lord, with all the manorial rights and profits. Dover Hospital was lord of the manor of Hornchilde. The same hospital received

a legacy of a fishpond, together with 100 acres of land. Mills were another valuable investment. William de Aurigny gave to the Hospital of the Blessed Virgin at Newstede, near Stamford, the mill at Offington. Odo Dammartin gave to the Hospital at Tanregge all his lands at Walsynggeham, with a windmill. Henry III gave to St. John's Hospital at Oxford, besides the Jews' garden, the mill at Edendon. Randulphus, Bishop of Durham in 1112, gave to the Kypier Hospital a mill at Milneburn. The same generous benefactor gave to the same hospital the town of Coldecotes, and two garbs of his lordships, and here follow the names of fifteen lordships, by which I suppose we should understand manors. A garb was a sheaf of corn, so that the grant was equivalent to thirty sheaves. Bishop Hugh of Durham gave to the same Hospital the town of Clyfton, and John Romsey gave to it half the town of Claxton, and his daughter Sybilla half the town of Hunstanworth. What property passed with the gift of a town I must confess I have not discovered. It could not be as valuable as it sounds, for at the visitation of 15 Henry VIII, the revenues of Kypier Hospital were valued at only £167, 2s. 11d., or about £2,000 of our money.

That houses were often given or bequeathed to hospitals will excite no surprise, but it is a little startling to know that hospitals were often endowed with one or more churches—by which is to be understood not a building attached to the hospital for the service of its inmates, but a church, often at a distance, and it might be in another county—not for use, but as a source of revenue. It is possible, though it is hardly likely, that by the gift of a church was meant the gift of the tithes due to that church. I say it is hardly likely, because when tithes were transferred from one ownership to another they were always, as far as I know, transferred under the name of tithes. For instance, the Knights of St. John of Jerusalem petitioned the King that the tithes of the parish church of Boston in Lincolnshire might be given to them. In plain terms, they asked that the church might be robbed, and that they, the Knights of St. John, might be made receivers of the stolen goods, which was accordingly done. What was meant by the gift of the church was, I conjecture, the gift of the glebe or the advowson, or both, and I am encouraged in this

conjecture by many records which show that hospitals did in fact receive as endowments the advowsons of churches. Thus, to the priory of Maiden Bradley, a leper hospital near Sarum, the Bishop of Salisbury appropriated the church of Kidderminster, which does not appear to have been in his lordship's diocese. The grant was subsequently confirmed by John de Ryphriis, Lord of Burgate, as the grant of the lands, that is, the glebe, and advowson of the church of Kidderminster; and this was subsequently confirmed in the same terms by Roger, Bishop of Worcester. It would appear at first sight that the advowson, as we understand it, of a church could not be a regular source of income, and, indeed, could not be of any pecuniary advantage at all without bringing upon all the parties to the transaction the guilt of simony; and it is not to be thought of that two right reverend Fathers in God could have countenanced such a practice. There is indeed some mystery about this particular transaction, for Herbert of Salisbury, who is said to have made the grant, was not elevated to that See until 1193, while Roger of Worcester, who is said to have confirmed it, died in 1181. However, there are plenty of other examples. King Edward I gave to the Hospital of St. Thomas of Acon, in London, the advowson of the church of Rotheley in Leicestershire; Henry II gave to the leper hospital at Havering the church of Havering; and, curiously, William of Lancaster gave to Conyngesheved Hospital, in Lancashire, the advowson of the House of Lepers at Kendal. Gilbert, Bishop of Rochester, gave to the Hospital of Strode, in Kent, the church of Ailesford, with all its appurtenances, the governors of the hospital paying two marks a year as an acknowledgment to the monks of Rochester, and also the churches of St. Margaret, Halling, and St. Nicholas, Strode, with like acknowledgments. Gilbert, Earl of Gloucester, gave to the master and brothers of St. Thomas' Hospital, Southwark, the advowson of the church at Blechyngelagh in exchange for all the lands and tenements the said master and brothers had in the towns of Redynton, Randon, Mycham, and Croydon. Evidently, therefore, if the bargain was a fair one the advowson must have been of considerable value. Hugh Foliot, Bishop of Hereford, in 1219, gave to the Hospital of St. Catherine at Ledbury several churches. Robert, Bishop of

Durham (there were several bishops of Durham named Robert—Robert Stichel, 1260; Robert de Ursula, 1274; Robert de Greystanes, 1333; and Robert Nevil, 1438; and I have not been able to identify the donor) gave to the Hospital of St. Cuthbert at Gretham the advowson of the church at Gretham; and many other instances could be cited. The puzzle is to some extent resolved by the discovery that the term advowson applied not only, as now, to the permanent right of presentation to a benefice, but also to the office of *advocatus ecclesiæ*, an officer who stood towards a parish church in much the same relation as a dean towards a cathedral church—that is to say, he managed the temporalities, he collected the revenues, distributed them, maintained the fabric, conducted any litigation in which the church might be involved, and generally upheld its rights. Thus, we see how the leper house at Kendal could have an advowson; and the same term was applied to the estate agency of private property. Thus, one of the endowments given by William Elsing to the hospital that he founded was his tenements, houses, and revenues in St. Lawrence Jewry and St. Martin-in-the-Fields, conferring the advowson and direction of the same on the dean and chapter of St. Paul's. An advowson was therefore equivalent to an estate agency, and was, of course, an office of profit.

Besides real property, the endowments of hospitals were of a very miscellaneous character. Peter de Rupibus endowed St. Thomas' Hospital, Southwark, with £343 per annum, and Henry III gave to the House of Converts at New Street, between the old and the new Temple, the enormous sum of seven hundred marks out of the exchequer for the maintenance of converted Jews. (He also gave all the land and tenements that had belonged to Constantine Aluf, who had been hanged for felony.) Money was not often given, however; when the gift was not of real property, it was usually either in kind, or perhaps more often of privileges, and both of these were often curious. Peter Corn has already been mentioned. Nigellus Mowbray endowed the Hospital of Burton Lazars with the tithe of all the meat and drink spent in his house, wheresoever he should be, enjoining his heirs to observe the same. William de Aurigny gave, amongst other things, to the Hospital of the Blessed Virgin at Newstede one-tenth of all the bread of his

house. Odo Dammartin, when he gave a windmill to Tanregge, gave to it also all his relics and silver cups to make a chalice, as also vestures and books and all other things belonging to his chapel, besides cows and other things. King John gave to the poor of St. Giles' Hospital without Shrewsbury both hands full of every sack of corn brought into the market, and one handful of every sack of meal. It will be observed that the royal donor gave liberally what did not belong to him. Henry III gave to the same hospital one horseload of wood every day out of Lynwood forest.

King Philip Augustus, in 1208, gave to the Maison Dieu of Argentan the right to take wood for firing from his forest of Gouffre, but only a one-horse cartload a day. The lepers of the hospital at Breteuil enjoyed the right to collect all the dead wood and crooked branches of beech and hornbeam from the forest, the right of free pasturage for their own hogs, and for ten hogs of their servants. Robert, Count of Alençon, granted to the leper house of St. Paterna pasturage for forty hogs. Alan Wilton gave to Yarum Hospital the liberty of grinding corn in his mills, and free pasturage for all their cattle on his lands. Dover Hospital, which was otherwise richly endowed, received from Henry III the tenth of all the profits of the port, and from Simon Warden, the founder, besides other property, the following acknowledgments of several of his tenants, viz., of one, 19 pence, 5 hens, and 60 eggs; of another, 13 pence, 4 hens, and 5 eggs; of another, 29 pence, 4 hens, and 75 eggs; of another, 25 pence, 4 hens, and 100 eggs; of another, 21 pence, 4 hens, and 50 eggs; making together the revenue of 8s. 11d. (equivalent to about eleven guineas of our money), with 20 hens and 290 eggs. Magnus, King of Man and the Isles, exempted the ships belonging to Conyngesheved Hospital from paying any dues in his dominions.

A valuable privilege granted to many hospitals was that of holding an annual fair. Such a grant was made by Henry V to the hospital at Bayeux, by Robert, Duke of Alençon, to the leper house of St. Paterna, and by Edward III to the Hospital of St. James, near Westminster. The last hospital had also the right of sac and soc, tol and tem, over all its lands.

Alexander III, by a Bull, granted exemption from tithes to all leper houses. Leo X granted 100 days' indulgence to all

who visited them and gave them alms. Edward III exempted the great leper house of Burton Lazars from all sorts of taxes and contributions. Richard III exempted the Hospital of Maison Dieu at Southampton from payment of tithes and fifths. To St. John Baptist's Hospital at Coventry Henry III generously granted license to the brothers and sisters to go or send abroad any messengers to gather alms for them during the space of seven years, and enjoined all persons to defend and assist them.

Perhaps the quaintest gift ever made to any hospital was made by former kings of England, and confirmed by Henry IV, to the Hospital of St. Giles, near Malden, in Essex. The keeper or Master thereof was to have towards the maintenance of the leprous burghers of the said town the forfeitures of bread, ale, and fish that was not good and wholesome in the said town of Malden. This grant is of such a strictly economical and thrifty character as to raise a *prima facie* doubt whether it could be devised by the unassisted genius of this nation, and on further investigation this doubt was confirmed, for I find that it was provided in 1384 by the Parliament of Scone that "gif ony man bring to the markit corrupt swine or salmond to be sauld, they sall be taken by the Bailies and incontinent without ony question at all sall be sent to the lipperfolke, and gif there be no lipperfolke they sall be destroyed uterlie." Thus, once more we are reminded of our debt of ideas to our northern neighbours.

No hospital ever received such wide privileges as St. Bartholomew's at Smithfield, the third oldest hospital now existing in this country. Henry I granted to it all the privileges and immunities that any church in England enjoyed, and that it should be as free as his own crown; and particularly relieved it from shire and hundred, from suits and pleas and murders, and geld and Danegeld, and hydage and assize, and works at castles or rebuilding of them or of bridges, or enclosing of parks, and carrying of wood and other things, as also from ferdwit, hengwit, wardpan, averpan, blodwite, futwite, childwite, hundredespan, thethinepan, muchbryche, mischeninge, scheweninge, fridsocre, westgeilttheof, wardwithe, utterne, fowinge, and withfange.

In case I should have a reader to whom any of these terms are unfamiliar, I append a glossary.

Sac, . . .	jurisdiction over tenants and vassals.
Soc, . . .	jurisdiction to administer justice generally.
Tol, . . .	liberty to buy and sell within a manor.
Tem, . . .	plenary jurisdiction over bondmen and villains.
Geld, . . .	a fine for an offence.
Danegeld, . . .	a regular tax of two shillings per hide of land.
Hydage, . . .	an extraordinary tax on every hide.
Assize, . . .	the regulation of weights and measures.
Ferdwit, . . .	a fine for the murder of a soldier.
Hengwit, . . .	a fine for hanging a thief without process of law.
Wardpan, . . .	a tax paid to sheriffs and castellans for guarding the country.
Averpan, . . .	service to the king by horse or carriage.
Blodwite, . . .	fine for shedding of blood.
Futwite, . . .	fine for quarrelling.
Childwite, . . .	fine for getting a bondwoman with child.
Hundredspan, . . .	tax on the hundred.
Thethinepan, . . .	tax on the tything.
Muchbryche, . . .	fine for breaking fences.
Mischeninge, . . .	damages for wrongful prosecution.
Scheweninge, . . .	duty paid by merchant strangers for the privilege of selling.
Fridsocre, . . .	certain privileges.
Westgeilttheof, . . .	the ransom of a thief.
Wardwithe, . . .	exemption from the tax for building castles.
Fowinge, . . .	arresting goods going to market.
Withfange, . . .	any fine, mulct, or distress.

TYPES OF BULLET WOUNDS OBSERVED IN No. 3 SCOTTISH GENERAL HOSPITAL, STOBHILL.*

BY ALEX. MACLENNAN, CAPT., R.A.M.C. (T).

THE following brief account of some of the wounds produced by rifle and artillery fire, which have been under my care at Stobhill, might be of some interest to the Society; I have also been able to persuade the wounded to allow me to have possession for this evening of their precious souvenirs in order to illustrate my remarks.

These wounds have shown me—first, the so-called explosive effects of the modern encased bullet, and, second, the localised character of the sequent sepsis.†

Naturally only the slighter cases could be sent so far from the front, but there have been instances of serious rifle bullet wounds accidentally received by Territorials.

Examples of sabre or bayonet wounds have not been seen. Most of the wounds caused by shell splinters as distinct from shrapnel bullets have been too serious to transport. Such as have been met with show how great is the destruction produced by even minute fragments of the shell.

I. *Rifle and maxim bullet wounds.*—Fig. 1 (p. 105) illustrates the shape and exact size of the German, Belgian, and French bullet; the old pattern British is similar to the Belgian, but both countries now furnish their soldiers with bullets shaped like the German. At close range the effects of these bullets are more or less identical, and they vary according to the resistance met with by the projectile.

Case 1 was that of a Territorial who, while crossing a railing, trailed his rifle after him, thereby firing it. The range was within 30 inches; the bullet entered the chest above and to

* Delivered before the Northern Medical Society, 6th October, 1914.

† In the new British bullet the fact that the tip is filled with aluminium does not make the bullet any more destructive; it is the softer lead bursting the hard case which does the damage.

the left of the left nipple, and passed out immediately to the axillary side of the left scapula. Entrance and exit wounds were identical, and were altogether trivial. There had been no hæmoptysis, though the left chest was filled with blood. No evidence of fracture of a rib was present. Other symptoms were entirely absent. This bullet going at top speed had not met with any serious resistance, and had passed through, doing the minimum of damage.

Case 2 illustrates the other aspect of the matter. Whilst cleaning his rifle, a Territorial accidentally jerked the trigger; the bullet struck the leg of a comrade 3 yards off. It entered

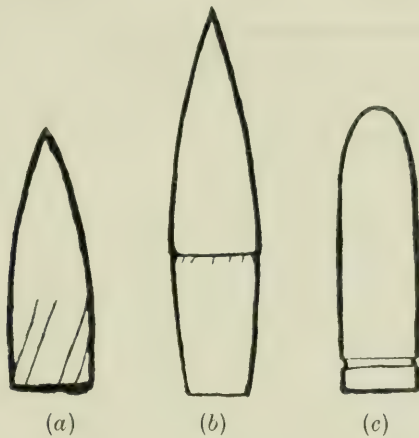


FIG. 1.

- (a) German bullet, after being fired.
- (b) French bullet, the anterior part being encased in a copper alloy.
- (c) Belgian bullet. The cartridge is indented into the groove better to retain the bullet; the newer bullet is now pointed like the German. A similar improvement has taken place lately in our own bullet.

just under the tubercle of the tibia by a small wound; the exit wound involved the entire calf, the muscles being everted and the skin blown away. When inspected from the front the tibia showed a neatly drilled hole where the bullet had entered it, but the bone was found comminuted when examined behind. Both anterior and posterior tibials were severed, and the posterior tibial nerve was contused—there being both sensory and motor paralysis. The capillary circulation was at first adequate, but soon became obstructed by an inflammatory swelling; gangrene set in, and amputation was required. The knee-cap was retained. No trace of the bullet was found. Recovery was perfect.

Case 3, again, illustrates the explosive effect of the ordinary bullet at close range. A Reservist, while cleaning his rifle, accidentally fired it when the muzzle was 6 inches above his knee. The entrance wound, just above the knee, was a minute hole in the centre of a blackened and burned area. The bullet traversed and pulped the outer third of the patella; it passed down the tibia, shattering it and the fibula for two-thirds of their extent, to gain exit by a 7-inch wound in the inner side of the calf. Bleeding was profuse. Primary amputation was performed, and the part of the patella not destroyed was applied to the sawn end of the femur. The entrance wound was used for drainage of the stump, which was otherwise closed. Convalescence was uninterrupted. The appearance of the part of the bullet recovered is shown in Fig. 2.



FIG. 2.

FIG. 3.

FIG. 2.—“Exploded” British bullet, with (X) aluminium tip still encased; lead had all “blown” through.

FIG. 3.—German bullet; most of lead had blown into the tissues.

Case 4 received his wound in France. The whole bullet passed through the middle of the thigh, comminuting the femur. The range was about 500 yards. The exit wound was about twice the size of the entrance.

Case 5 showed an instance of close range effect, about 200 yards. While turning to despatch a wounded horse, and so exposing himself, a cavalryman received a bullet between the anus and the coccyx. The bullet had been extracted through a small incision in the femoral region; its appearance is indicated in Fig. 3. On arrival at the hospital both wounds were freely discharging a foul sero-pus. When the wound of entrance was enlarged, a great cavern, into which the closed fist could be inserted, was exposed; it was lined with sloughing

membrane, with bone chips embedded. The ischium had been pulped, and the hip-joint freely opened. The cavity was swabbed out with lin. iodi., and no further attempt made to clean it. It was packed with gauze moistened with methylated spirit. Subsequently the cavity was douched with 1 in 40

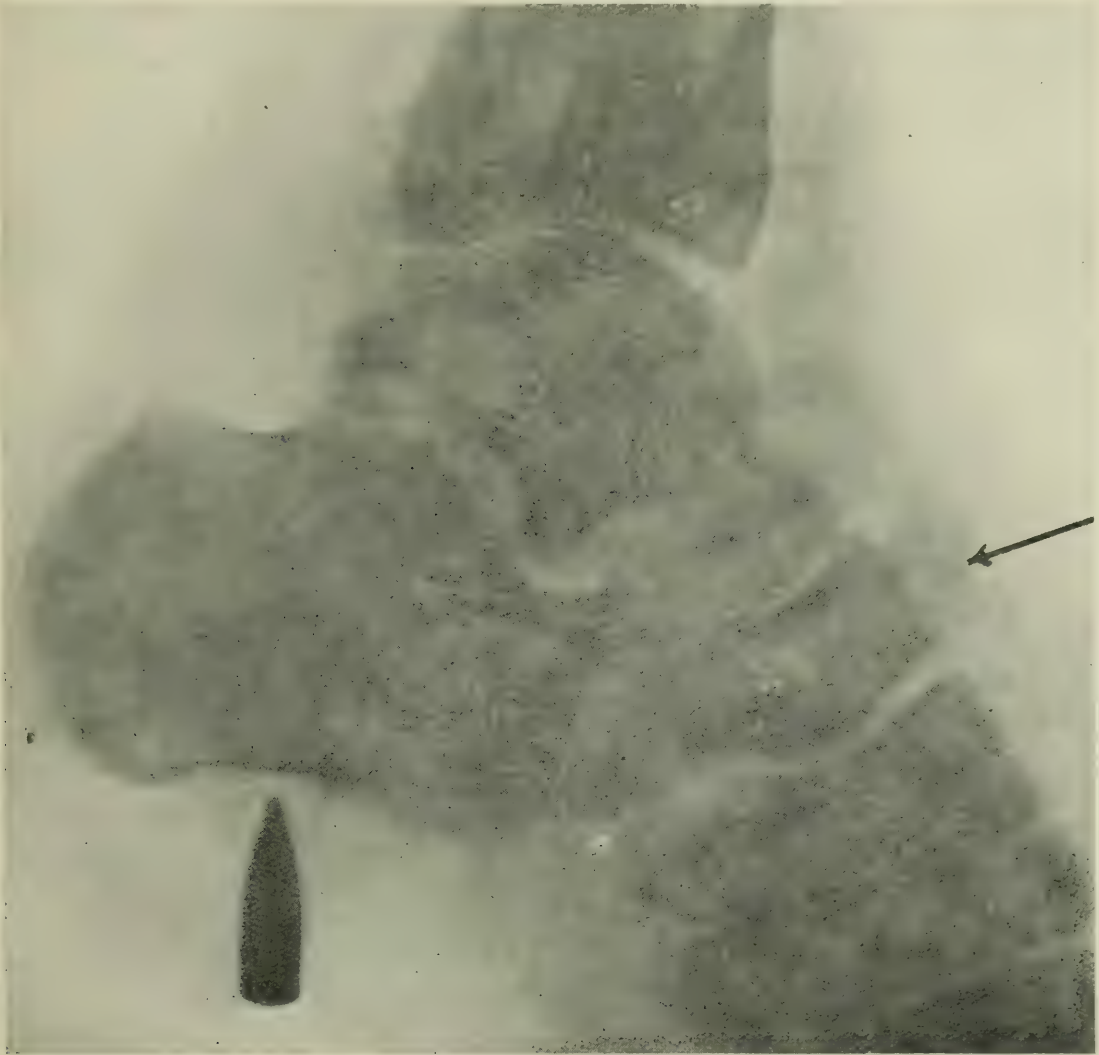


FIG. 4.

The arrow indicates the point of entrance ; the scaphoid was tunnelled.

carbolic, with a final instillation of lin. iodi. previous to packing with the spirit gauze. Since then healing, especially after the extrusion of a sequestrum, has gone on rapidly. Extension was applied to the leg. The hip-joint seems to have looked after itself extremely well. Such a favourable course

is quite unlike any similar joint traumatism received in civil life. Possibly the freeness of the drainage from the first conserved the joint. This injury was, however, a poor recompense for an act of humanity.

Case 6 received while on the march a bullet through the ankle (instep) at long range. There was a small entrance wound just over the instep, while a bruise on the sole at the heel indicated the position of the palpable bullet. The wound was discharging effervescent pus, but there was little arthritis and practically no fever. The skiagram is shown in Fig. 4 (p. 107). After penetrating the tarsus, the bullet had impinged



FIG. 5.

Position of bullet (drawn too small), which probably entered base first (plate broken).

on the heel of the boot, and had performed a summersault—a movement which projectiles, with a centre of gravity far back, are prone to do. Extraction of the unaltered bullet through a short incision was simple. The track of the bullet was tunnelled through and cleaned out with a spoon, fragments of sock and pieces of bone being removed. Lin. iodi. was instilled, and the passage threaded through with a strip of gauze. Healing was uninterrupted.

Case 7 was an instance of a bullet-wound at long range, estimated at 1,200 yards, received near Paris. The bullet penetrated the muscles of the gluteal region, and its extraction was demanded because sitting with comfort was impossible. The

entrance wound was quite healed. The bullet could be felt by deep palpation lying midway between the ischium and the trochanter. Through a 2-inch incision this souvenir was found lying in the quadratus femoris. There was no sepsis and

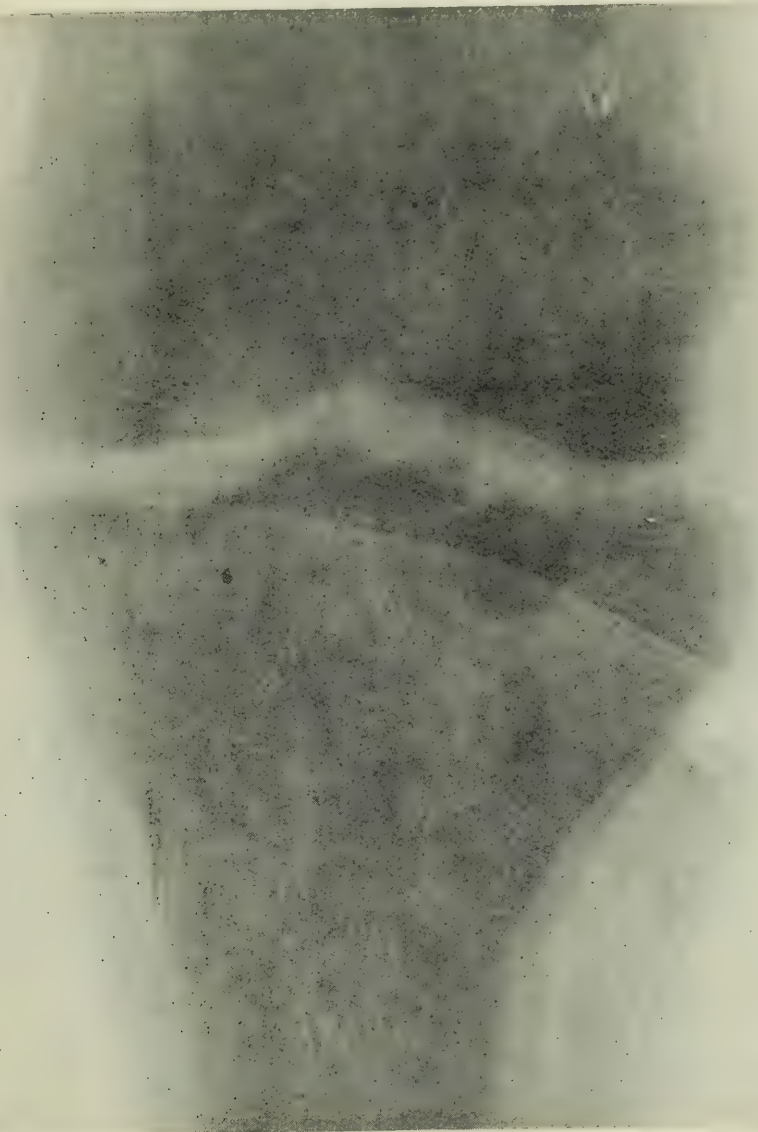


FIG. 6.

Extra-articular shrapnel bullet.

the wound was closed, healing by first intention. Those in the theatre during the pre-anæsthetic and those in the ward during the post-anæsthetic period were favoured by this man with a most dramatic recital of the orders, comments on their shooting, and advice given by him to his squad in the trench.

Case 8 received his wound at close range from a machine gun. From the position of the bullet and indentation, it was probably a ricochet with penetration by its blunt end. In France two unsuccessful attempts had been made to extract the bullet. The skiagram, which was unfortunately broken, showed the bullet to be situated in the trochanter as seen in Fig. 5 (p. 108). It was found firmly impacted against the inner surface of the bone, where it formed part of the wall of a small abscess cavity. The



FIG. 7.

Intra-articular shrapnel bullet.

usual treatment was applied, and healing is going on rapidly. At such a close range, a machine-gun bullet (which is almost identical to the rifle bullet) would most certainly have done more damage had not its energy been reduced by some previous impact.

II. *Shrapnel wounds*.—The majority of the wounds found at Stobhill have been produced by shell-fire; and the greater proportion in this class have been produced by shrapnel bullets, only a

few being caused by parts of the shell. These bullets are made of lead, and are like large pills; they produce slight wounds, unless acting at close range, when they are very destructive. When the shell bursts at a distance, it would appear that slight protection prevents the penetration of these bullets. It might, therefore, be feasible to provide the troops with armour which would be light but yet protective. A plate of steel half a pound to the square foot, folded up the middle, might well be placed over the men when lying exposed.

The following cases illustrate the type of wound produced by shrapnel bullets:—

Case 9 was that of a soldier who was struck on the knee

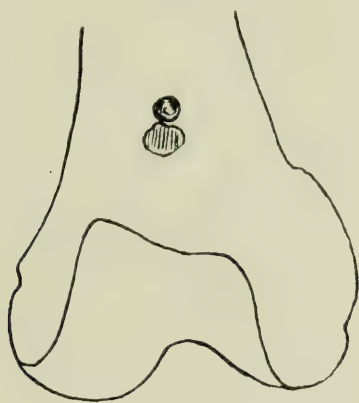


FIG. 8.

Shrapnel bullet turned upwards in cancellous bone after entering lower down (plate broken).

while marching. The bullet entered at the inner side of the patellar ligament. The joint was slightly distended with fluid. There was some redness and swelling to the outer side of the ligament. There was no fever. The *x*-ray plate shows the bullet in the upper part of the tibia (Fig. 6, p. 109). An incision was made to the outer side of the ligament, which opened the extra-articular bursa under it; the ball was just embedded in the bone, and was easily removed. Recovery was uneventful.

Case 10. Here the bullet entered the instep, and the skiagram showed it lying in the angle between the tibia and the astragalus. Fig. 7 (p. 110) shows the position. An incision was made in the line of the peroneus tertius, and the joint opened; the bullet

was picked out, and the wound closed without drainage. Recovery was as desired.

Case 11. Fig. 8 (p. 111) shows the shrapnel bullet in the lower end of the femur. (The plate got broken, hence the sketch.) The entrance wound was small and clean. There was no fever, but some effusion in the knee-joint was present. The entrance

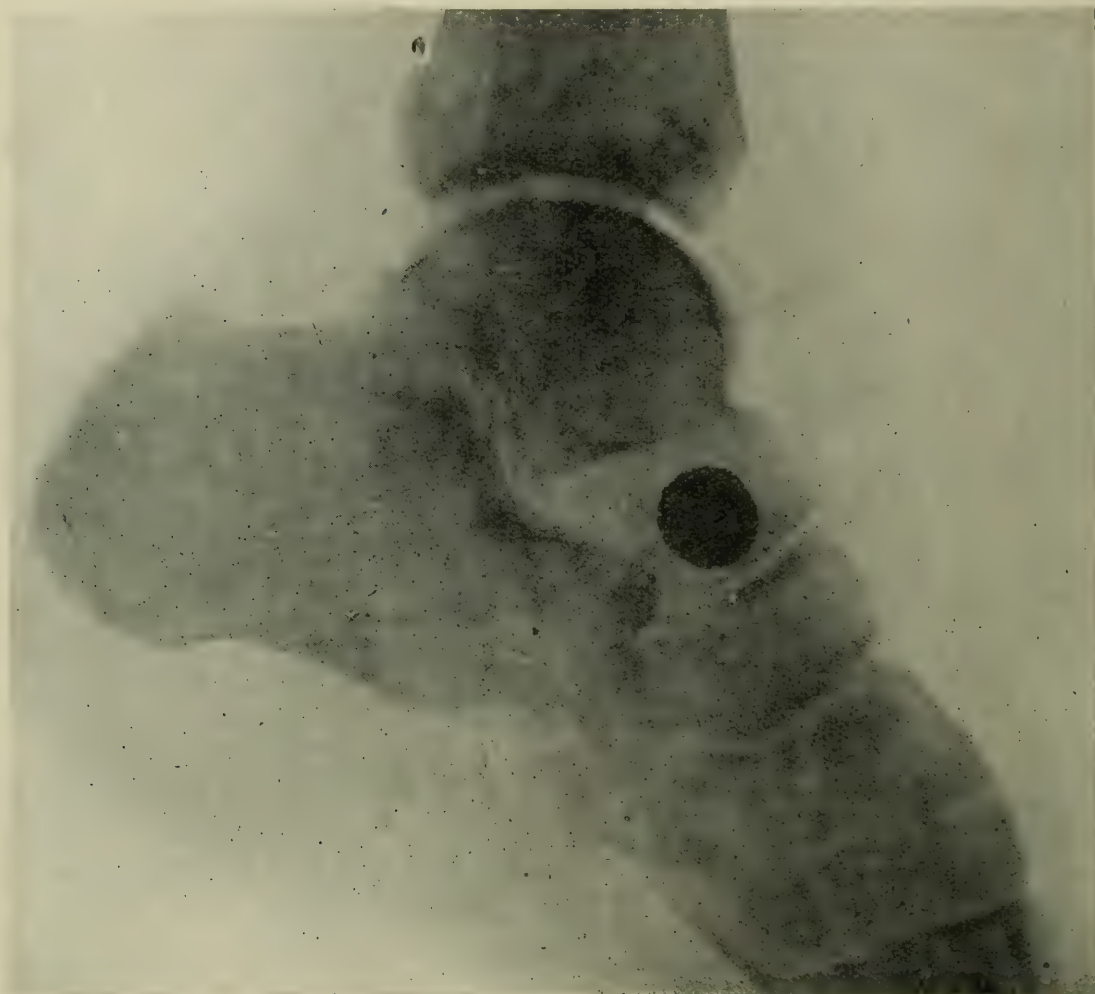


FIG. 9.

Extra-articular shrapnel bullet.

wound was enlarged, and the hole in the femur explored. After punching out about half an inch in an upward direction, the much-deformed bullet was picked out. After penetrating the cortical bone the ball had evidently rolled upwards in the cancellous tissue. Spicules of bone were embedded in the lead. Healing was as desired.

Case 12. The skiagram shows the bullet over the head of the astragalus (Fig. 9, p. 112), but from the description as to the mode of production as well as the appearance of the foot, it was evident that the ball was in the soft tissues. The wound was slightly enlarged, and extraction of the bullet was easily performed. Some cellulitis with fever followed, and lasted for

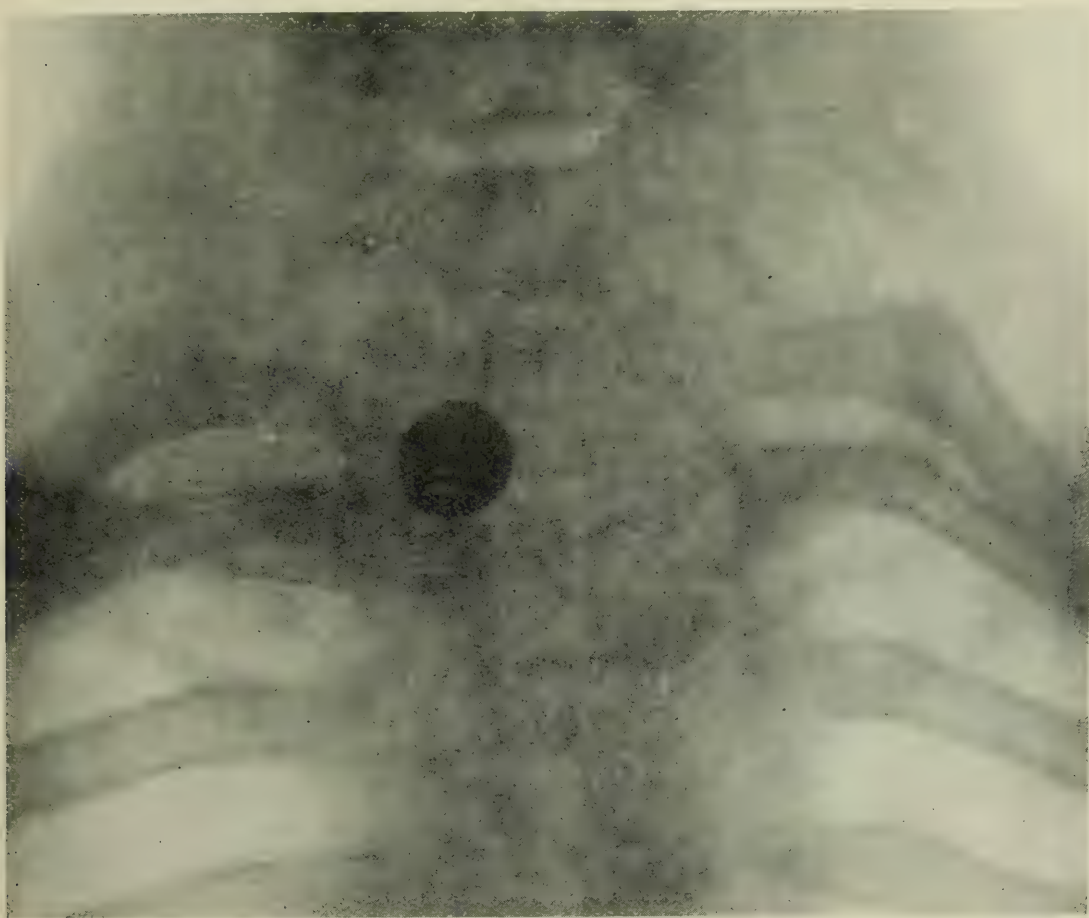


FIG. 10.

Shrapnel bullet lying in body of first dorsal vertebra in the left side.

a few days; after which events proceeded as expected. The patient left the hospital with the wound healed, but under a plaster-casing.

Case 13. From the damage done in this case the shell probably burst near the man. The bullet entered the left side of the mouth, and shattered the left lower jaw. There was no fever; though a purulent and malodorous discharge of pus

with bone particles was a source of discomfort. There was some dysphagia. An *x*-ray plate (Fig. 10, p. 113) showed the bullet between the first and second dorsal vertebræ (mistakenly on the right side). An incision on this side, at the insertion of the sterno-mastoid, failed to reveal the bullet till the finger explored the left side of the spine. A slight irregularity, palpable through the œsophagus, was made out on the left side. The gullet and trachea were retracted to the left; and the bullet, half embedded in the body of the first dorsal vertebræ, was extracted; it was distorted and had spicules of bone (lower jaw) embedded on its surface. The wound was packed, and an ideal recovery followed.

Remarks.—It will be noted that these bullet wounds, though apparently very foul, discharging effervescent pus, have little surrounding cellulitis. The track of the bullet is a necrosed tube, produced either by mechanical means or by heat (the men say that the bullets from rifle and machine guns are hot on account of their rapid rotation, while shrapnel and shell fragments are hot on account of the explosion). I should imagine the necrosis to take place on account of pressure and not from heat, except in the case of shrapnel wounds. The proverbial dirtiness of the shell-wound may very likely be due to burning. In any case the necrosed tube of tissue is protective, and should not be unnecessarily disturbed. Bullets and small pieces of shell, unless superficial, should not be removed as a routine, till a considerable time has elapsed. The interference necessarily opens up fresh tissues and spreads infection. One sees numerous perforations through the fleshy parts of the arm and leg with suppuration, but without inflammation. Such wounds heal quickly, if not interfered with. The pathogenic organisms carried in with part of the clothing by the bullet or shell fragment are inoculated upon dead tissues, and before they get into touch with the fresh tissues a protective zone has been formed. The lymphatics are sealed, vessels are thrombosed, and granulation is quickly formed. To interfere rudely with this protective layer is bad practice; it induces the saprophyte to become a parasite.

Not every bullet or particle of shell calls for removal; large and numerous incisions, with a prolonged search for small

fragments lost in muscles, should not be resorted to. Nerve injuries should not be tackled till healing is complete.

X-ray plates should be taken in two planes, especially for the localisation of shell fragments.

A clear account should be sought for as to the direction from which the missile came, and the position of the part of the body struck should be noted; the nature of the resisting structures should be considered. If these points be taken in conjunction with the appearance of the wound, &c., difficulty will not often be found in finding the foreign body. I would also advocate the omission of stitches, free drainage being essential.

The free use of strong solutions of iodine, and the plentiful supply of methylated spirit, will quickly improve the health of a wound. The iodine should not be used too often, and should not be so applied as to vesicate the skin.

Among some of the more serious cases it would appear that primary amputation is not resorted to sufficiently often. It should not be forgotten that war surgery cannot expect to give the results obtained in civil practice, and the conservation of limbs may be at the expense of lives.

CASE OF GASTRIC CANCER WITH BONE-MARROW METASTASES AND ANÆMIA.

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AND

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ALTHOUGH cancer of the bone-marrow is probably not infrequent as a complication of visceral cancer, yet comparatively few cases have been recognised and published. The recorded cases, to the number of thirty-six, have been recently reviewed by Ward. The present case is the third obtained by one of us (A. W. H.) in five years. As the subject was fully discussed in previous papers, we desire simply to place this case on record.

The first patient was a woman of 64 years, whose symptoms pointed somewhat indefinitely to cancer of the stomach. She suffered greatly from bone pains, and had a severe anæmia, with marked diminution in the number of erythrocytes, high colour index, granular basophilia, polychromatophilia, slight poikilocytosis, megalocytosis, a relative lymphocytosis, and the constant presence of numerous myelocytes and erythroblasts, the majority of which were megaloblasts.

The second case was a man of 52 years. His history and an examination of the abdomen made it clear that he was suffering from cancer of the stomach, but his appearance was suggestive of pernicious anæmia. Bone pains and tenderness were marked. His blood showed a low red cell count, high colour index, megalocytosis, slight polychromatophilia, at first a relative lymphocytosis, a moderate number of myelocytes, and only a few normoblasts and megaloblasts.

In the present case the patient was a woman aged 59 years. There was a large gastric tumour with evidence of hepatic

enlargement, marked jaundice, and signs of intracranial mischief. Tenderness and pains in the sternum were present. An examination of the blood revealed a moderate anæmia, with a high colour index, slight megalocytosis, polychromatophilia, and granular basophilia, and a small number of myelocytes and myeloblasts, with an occasional erythroblast.

Clinical history.—The patient, a woman of 59 years, was admitted to the Glasgow Royal Infirmary on 9th July, 1914, suffering from jaundice, numbness of the right side of the nose and lower eyelid, and pain in the right side of the mouth and tongue.

During the past year she had experienced some discomfort in the epigastrium, not specially associated with the ingestion of food. About three months prior to admission she had very severe pain in the front of the upper part of the chest, extending round to the back. After a month's rest and treatment this condition improved greatly. A week later there was some recurrence of pain, which disappeared entirely after a fortnight. A month before admission severe shooting pains appeared in the right side of the forehead, in the right ear, and in the right cheek. A little later the pains became associated with numbness over the right side of the nose and right lower eyelid, and she suffered from a painful burning sensation in the right half of the tongue and mouth. During the past year she has lost flesh and strength considerably. Jaundice was noticed for the first time on the day of admission.

The personal and family histories were quite unimportant.

Note on admission (9th July, 1914).—Patient is a moderately stout woman of medium size, who is distinctly jaundiced. There is no obvious anæmia. The tongue is moist and furred. On examination of the abdomen a hard nodular tumour is felt, evidently of the stomach. The liver is enlarged, and a distended gall-bladder is palpable. The other viscera are apparently normal. There is impaired tactile sensibility over the right side of the face. The right pupil is larger than the left, and both react normally. The patient's condition prevents a detailed examination of the cranial nerves. The urine is acid, loaded with bile; specific gravity, 1020; contains a trace of

albumen; indican is present in small amount; no urobilin and no Bence-Jones proteid present.

On the 11th, 12th, and 14th July the motions were dark and tarry. The patient's progress was very unsatisfactory. The jaundice deepened, and the gastric tumour increased in size, while she steadily and rapidly lost flesh and strength. Paralysis of the right third, fourth, fifth, sixth, and seventh cranial nerves became evident, and there was a moderate degree of proptosis of the right eye. These developments were considered to be due to secondary growths at the base of the brain. There was also a considerable degree of deafness of the right ear, but this was probably due, in greater part at any rate, to an old catarrhal condition of the middle ear.

On the 21st of August the patient complained of pain in the sternum at the level of the angle of Ludwig. The bone there was distinctly tender on percussion. A careful examination of the other bones revealed no tenderness. On the same day the erythrocytes numbered 3,430,000 per cubic millimetre and the leucocytes 11,300. The hæmoglobin (estimated by Haldane's method) was 82 per cent. The colour index was thus 1·2. A differential count showed polynucleated neutrophiles, 74·4 per cent; polynucleated eosinophiles, 1·8 per cent; polynucleated basophiles, 0·6 per cent; small lymphocytes, 13 per cent; large lymphocytes, 1·8 per cent; large mononuclears and transitionals, 2·8 per cent; myelocytes, 1·4 per cent; myeloblasts, 4·2 per cent. The films showed that the erythrocytes stained well, with occasional slight polychromatophilia and basophilia. There was a tendency to megalocytosis, but no poikilocytosis. One normoblast was noted in counting 500 leucocytes (Leishman's stain).

On 27th August the erythrocytes numbered 3,660,000 per c.mm., the leucocytes 91,500 per c.mm., and the hæmoglobin was 83 per cent. A differential count gave polynucleated neutrophiles, 73·6 per cent; polynucleated eosinophiles, 0·8 per cent; polynucleated basophiles, 0·6 per cent; small lymphocytes, 15 per cent; large lymphocytes, 1·2 per cent; large mononuclears and transitionals, 4·6 per cent; myelocytes, 1·2 per cent; myeloblasts, 3 per cent. One megaloblast and one normoblast were seen in a count of 500 leucocytes.

On 29th and 30th August slight hæmatemesis occurred. On the 31st the patient vomited a good deal of "haresoup" material, and became very drowsy. She gradually relapsed into coma, and died next day.

	21st Aug.	27th Aug
Erythrocytes, per c.mm.,	3,430,000	3,660,000
Leucocytes,	11,300	9,500
Hæmoglobin, per cent,	82·0	85·0
Polynucleated neutrophiles, per cent,	74·4	73·6
Polynucleated eosinophiles,	1·8	0·8
Polynucleated basophiles,	0·6	0·6
Small lymphocytes,	13·0	15·0
Large lymphocytes,	1·8	1·2
Large mononuclears and transitionals,	2·8	4·6
Myelocytes,	1·4	1·2
Myeloblasts,	4·2	3·0
Normoblasts, } on counting	1	1
Megaloblasts, } 500 leucocytes,	0	1

Hæmoglobin estimated by Haldane's method.

Erythrocytes and leucocytes counted by Thoma-Zeiss apparatus.

Differential counts made on films stained by Leishman's stain.

The following is the pathological report by Professor Teacher:—

Summary.—Carcinoma of the stomach, with secondary tumours in the lymphatic glands and bone-marrow; tumour of the base of the skull, involving several nerve roots.

External.—The body was considerably emaciated, and moderately jaundiced. There were no external tumours.

Thorax.—In raising the sternum, it bent like a green-stick about the junction of the manubrium and body, and on splitting it there was found to be a thickening around a cavity with thin bony walls, and containing bloody material like that seen in the cancerous bone-marrow of the femur. Lower down there was another similar expansion of the bone.

Lungs.—Both showed a number of small white tumour nodules embedded in the surface, but none in the substance of

the lung. The lymphatic glands at the roots of both lungs and right up into the neck were considerably enlarged and evidently cancerous. The lungs were extremely voluminous from general fine emphysema.

The *heart* was soft and atrophied. There was slight atheroma of the senile type.

Abdomen.—The *gall-bladder* was distended, and projected as a thick sausage-shaped body about 2 inches beyond the margin of the liver. To the left of it there was an irregular firm mass, representing a tumour in the neighbourhood of the pylorus with extensive spread into neighbouring structures.

The *liver* was about normal in size, fatty, bile-stained, and studded with white tumours in considerable number. It did not give any iron reaction. There were adhesions between the stomach, gall-bladder, and liver, and numbers of enlarged glands and much diffuse cancerous infiltration were present about the portal fissure, and also behind the stomach, fixing the *pylorus* and the *pancreas* firmly to the *vertebral column*. The tumour infiltrated the root of the mesentery and pre-vertebral glands and tissues down to near the top of the sacrum.

The *stomach* was distended with fluid of dirty brown colour, due to altered blood. The source of the bleeding was not made out. The *pylorus* was firm, and the orifice slightly constricted. There was no distinct tumour, but in the posterior wall, near the greater curvature and about 2 inches from the pylorus, there was a deep ulcer admitting the tip of one finger for about three-eighths of an inch. This presented the characters of a simple chronic ulcer, but over a considerable area the surrounding mucous membrane was thickened, and the thickened muscular wall was very white and hard. The condition suggested carcinoma, and microscopic examination confirmed this.

The *intestines* showed nothing of particular note. There was a caseous nodule about the size of a marble in the root of the mesentery. The head of the pancreas was very hard, apparently from cancerous infiltration.

The *spleen* was soft (weight, 6 oz.), with full pulp of a rather deep red colour. There were no tumours.

The *kidneys* showed very advanced cloudy swelling and

bile-staining, but no tumours. There was nothing of note in the other abdominal organs.

Bones.—There were a number of thickenings of the ribs, most of which were expansions of the bone containing bloody material not obviously tumour, but there were also a number of red and white tumours. The bodies of the vertebræ were very soft, and the marrow very red, but tumours were not distinguishable. The right femur was opened for about 4 inches in the middle. The lowermost section showed yellow marrow with slight red reaction on its upper part. The next was a mass of red and white tissue, consisting of tumours and red marrow mixed. The third seemed to contain tumour, but was mostly toughish yellow tissue mixed with soft bone, and the uppermost was tough yellowish tissue like tumour-infiltrated fat, and some areas of soft bloody material were present in the two last; microscopic examination showed tumour in all parts of this. The left humerus showed similar conditions in the upper part of the shaft.

Head.—The dura mater was rather tense. The brain was flattened on the surface, particularly of the right frontal lobe, which appeared to be considerably enlarged. On removing the upper slice the enlargement was found to be due to a mass of blood clot (fully 2 oz.), and yellow tissue like a gelatinous pleuritic fibrinous exudate, which lay between the blood clot and the brain tissue. The mass lay above, and mostly anterior to, but slightly overlapping the corpus striatum, and was commencing to burst out on the anterior end of the lobe. Sections did not show tumour. There was no other lesion in the brain.

The nerve roots were identified and were apparently healthy; but the whole region of the sella turcica, anterior part of the basi-sphenoid, with the adjacent wings of the sphenoid, and probably the tip of the pars petrosa on the right, was replaced by tumour, which projected in rounded nodules through the floor of the cranium. The condition was more advanced on the right side, and it was clear that the cranial nerves on that side from the optic back to the seventh and eighth ran into tumour tissue. A vertical incision passed without much difficulty from side to side through the middle of the sella turcica, and, by an oblique incision through the basi-sphenoid,

a considerable mass was cut out with knife and chisel. The presence of tumour was verified microscopically. The finger was passed through the gap into the naso-pharynx, where tumour, however, had not been seen during life.

Microscopic examination.—The floor of the ulcer in the stomach consisted of a thin layer of granulation tissue resting on muscle which was scarcely at all infiltrated by tumour. It was clearly a simple chronic ulcer. The sides, corresponding to sub-mucous and mucous coats, were, however, replaced by tumour; and the surrounding thickening of the mucous membrane was also due to the presence of tumour. The muscular and sub-peritoneal coats were greatly thickened and infiltrated by fine processes composed of polyhedral cells, the tumour being a carcinoma which seemed to provoke very pronounced fibrous tissue reaction. In the liver and bone-marrow the tumours at the margin consisted of plump processes of polyhedral cells which tended to disappear without undergoing colloid change, so that the central parts of the nodules consisted of practically nothing but dense fibrous tissue. The bloody areas in the bone-marrow were connected with tumour, but the exact nature of the condition could not be made out. The new red marrow in the shafts of the long bones consisted of all the usual elements in about normal proportion. In films there was some poikilocytosis, but it was clearly not a megaloblastic marrow. The spleen contained a certain number of granular cells, but not sufficient to suggest development in the direction of bone-marrow. There was no free iron in the liver.

As in the two cases already published, the diagnosis in the present case was suggested by the blood condition and the bone pains. The change in the blood was not nearly so striking as in the first case, but the high colour index and the leucocytosis, with the presence of myelocytes and myeloblasts were certainly suggestive. The anæmia was not marked, but the patient's existence was early terminated by the large intracranial growth. The bone pains were somewhat overshadowed by the agony produced by the involvement of the cranial nerves. As will be seen from the report of the autopsy, the secondary growths,

apart from the bone-marrow, were very widespread. As in the two previous cases, overgrowth of fibrous tissue was a conspicuous feature of the tumours. Examination of the bone-marrow microscopically, owing to decomposition, was not very satisfactory. It showed a moderate reaction of practically normal type, and was not megaloblastic in character. There was no enlargement of the spleen, and no evidence of any attempt at blood regeneration in it. The liver gave no iron reaction. No Bence-Jones proteid was present in the urine.

It would appear that in any case of carcinoma, bone pains and an anæmia with high colour index and myelæmia should suggest the diagnosis of carcinoma of the bone-marrow.

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Obituary.

JOHN WAINMAN FINDLAY, M.D., F.R.F.P.S.G.

A FINE spirit was taken away from among us when John Wainman Findlay died on the morning of Saturday, 16th January. It is true that medical graduates of recent years had not come into personal contact with this brilliant alumnus of our University, who, if health had permitted, would have become one of their ablest clinical teachers and kindest helpers, but to those of us who had the privilege of meeting Findlay often, and working with him, his friendship was one of the true joys of life, the memory of which will remain.

The principal facts concerning the more public aspects of Dr. Findlay's life are given in the interesting article which appeared in the *Glasgow Herald* of Monday, 18th January, but a few notes may be added here. Findlay was born in Glasgow on 12th August, 1873, and after passing through the High School, studied medicine at the University of this city. There he graduated M.B., C.M. with honours in 1894, and M.D. with honours in 1898. He was awarded a Bellahouston Gold Medal for his graduation thesis on "The Choroid Plexuses of the Lateral Ventricles, their Anatomy, Functions, and Pathology (in relation specially to insanity)."

After qualifying in medicine he served as House Physician under the late Dr. Finlayson in the Western, and as House Surgeon under Dr. James Adams and Mr. Pringle in the Royal Infirmary. About this time he became aware that the state of his chest was not satisfactory, and as far back as 10th April, 1896, he set sail from this country for Australia, in search of health. On the voyage to and from he spent a year; another year was devoted to work at the Crichton Royal Institution, Dumfries, and other six months he spent as *locum tenens* in different parts of this country. The trip to Australia appeared to restore him, but he broke down again ten years later, viz., in the spring of 1906, and thereafter his health was always in a precarious condition.



From Photograph taken at the time of the South African War.]

JOHN WAINMAN FINDLAY.

He and I became closely associated in our work at the Royal Infirmary in 1899, and from that time onwards I learned to appreciate the manifold attractions with which he was endowed. Intellect, industry, and literary taste, together with modesty, helpfulness, and charm in conversation, are among the constituent elements in their recollection of John Findlay which his friends will always cherish. This, I think, was a particularly happy period of his life. He enjoyed his original work in the wards and the pathological laboratory, and the literary undertakings to which these researches led; while in private practice he was associated with his father, to whom he was strongly bound by more than mere family ties.

Our collaboration was interrupted for a year by his departure for South Africa to go through the Natal campaign under General Buller, with Sir David Bruce as his own immediate chief. Then he resumed practice in Glasgow, and worked at the Infirmary and St. Mungo's College as well as in private, until his health again gave way. This happened just at the time when he might reasonably have expected to be appointed to the full charge of wards, and it prevented him from sending in an application for the office which was about to become vacant. He went back to South Africa for a time, then to the Continent of Europe, and then to different parts of Scotland, until, in 1910, he finally settled down at Lyttle Park to a life of comparative seclusion. He continued to be an occasional contributor to the *Glasgow Medical Journal*, particularly to the department of "Current Topics," and the communications he sent were sure to be heartily welcomed by the Editors. As time passed, and his life became more detached from medical practice, his interests inclined more and more in the direction of general as distinguished from professional literature, and if he had been spared he might yet have won laurels of a kind for which but few medical men are qualified to compete.

John Findlay belonged to a talented family, two of his brothers having already attained to high positions in their respective professions. Dr. William Findlay, their father, has, of course, been well known to literature for many years, and we may hope that much good work will yet come from his pen.

LIST OF DR. FINDLAY'S WRITINGS.*

- "A research into the histological structure of the olfactory organ."—*Jour. Anat. and Physiol.*, July, 1894.
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- "On the pathology of acute yellow atrophy of the liver."—*Brit. Med. Jour.*, June, 1900.
- "A chapter of field hospital experiences in the Eastern Transvaal."—*Glasg. Med. Jour.*, March, 1901.
- "Changes in the peripheral nerves in a case of diabetes mellitus."—*Glasg. Med. Jour.*, October, 1901.
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- "Multiple subcutaneous nodules of fibroid character, and leucoderma, in a case of rheumatoid arthritis."—*Glasg. Med. Jour.*, July, 1903.
- "Rhythmical spasm of the diaphragm and other muscles of inspiration: hysterical chorea?"—*Glasg. Med. Jour.*, September, 1903.
- "Septic arthritis of the ankle-joint during convalescence from mumps."—*Glasg. Med. Jour.*, January, 1904.
- "Alcohol and the cardiovascular system" (jointly).—*Med. Temp. Rev.*, 1903, and later years.
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- "Case of chronic lymphatic leukæmia."—*Glasg. Med. Jour.*, August, 1904.
- "Histological report on a case of sudden permanent amaurosis with optic atrophy and epilepsy."—*Jour. of Ment. Sc.*, July, 1904.
- "Cystitis and its treatment by salol and urotropine."—*Glasg. Med. Jour.*, 1905.
- "Gummatous synovitis of many joints, closely simulating rheumatoid

* Our thanks are due to Mr. Walter Hurst, of the Royal Faculty of Physicians and Surgeons, for his assistance in preparing this list.

- arthritis, in a congenitally syphilitic child" (jointly).—*Glasg. Med. Jour.*, 1906.
- "Case of cancer of the stomach, in which large quantities of blood were vomited, and wherein after death was found a gastro-jejunal fistula" (jointly).—*Glasg. Med. Jour.*, 1906.
- "Case of subacute spinal muscular atrophy: a clinical and anatomical report" (jointly).—*Glasg. Med. Jour.*, June, 1906.
- "Case of typhoidal cholecystitis in which the usual symptoms of typhoid were absent, and in which the bacillus typhosus was isolated during life from the cystic and intestinal contents" (jointly).—*Glasg. Med. Jour.*, 1906.
- "Sequel to a case of chronic lymphatic leukæmia, with *post-mortem* findings" (jointly).—*Trans. Path. and Clin. Soc.*, March, 1906.
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WILLIAM EBENEZER MAITLAND, M.B., CH.B. GLASG.,
SEAFORTH HIGHLANDERS.

WE regret to announce the death of Second Lieutenant W. E. Maitland from wounds received in action. Lieutenant Maitland, the son of Mr. George Maitland, of Kilmacolm, studied medicine in Glasgow University, where he took the degrees of M.B., Ch.B., in 1913. After graduation he became house surgeon in the Royal Infirmary with Mr. Paterson, and thereafter was engaged in the outdoor department of the Western Infirmary. He returned to the Royal Infirmary in April of last year as house physician under Dr. Mackenzie Anderson. In 1909 Lieutenant Maitland joined the Officers' Training Corps, University Contingent, in which he was subsequently gazetted to a commission. Throughout his career as a student he was prominent as an athlete, and had played in the first Rugby fifteen for several seasons. At the outbreak of war Lieutenant Maitland transferred his services to the Special Reserve of Officers, from which he was gazetted to the 3rd Battalion Seaforth Highlanders. Popular with his fellow-students, among whom he had many friends, he was also devoted to his work, and his death on 24th December, 1914, at the age of 25 years, has cut short the promise of a brilliant career.

DUGALD MITCHELL, M.D. GLASG.,
FALKIRK.

WE regret to announce the death of Dr. Dugald Mitchell, which occurred suddenly at his residence on 5th January, 1915. Dr. Mitchell, who was born at Tarbert, Loch Fyne, proceeded from the local school to Glasgow High School, and subsequently studied medicine at Glasgow University, where he took the degrees of M.B., C.M., in 1879, and that of M.D. in 1894. He began practice in Tillicoultry, but removed to Renton in 1881. There he was for a number of years parochial and sanitary medical officer, and he was for ten years a member of Cardross School Board. In 1894 he was appointed a J.P. for Dumbartonshire, but in the following year left Renton for Rothesay, where he practised for five years. On his departure he was entertained by the community of Renton, who presented him with a cheque for £110 in recognition of his services. After leaving Rothesay he went to Camelon, Falkirk, and soon became one of its prominent citizens. He was an ardent churchman, and was also deeply versed in the language and history of the Scottish Highlands. He was a close student of the history of medicine, and his contributions to medical literature, some of which appeared in the *Glasgow Medical Journal*, were largely upon historical subjects. His prominent position in the medical circles of the district was recognised in his appointment to the presidency of the Stirlingshire Branch of the British Medical Association. His works upon the Highlands were widely known and appreciated, and included a *History of the Highlands and Gaelic Scotland*, *The Book of Highland Verse*, and *Tarbert in Picture and Story*.

WILLIAM WALTON DON, M.D. GLASG.,
LONDON.

WE regret to announce the death of Dr. W. W. Don, which occurred at his residence in Maida Vale on 10th January, 1915. Dr. Don, who was the youngest son of Surgeon-General Don, studied medicine at Glasgow University, taking the degrees of

M.B., C.M., in 1893, and that of M.D., with honours, in 1897. He was a member of the Obstetrical and Gynæcological Section of the Royal Society of Medicine, and had made several contributions to medical literature, chiefly on gynæcological and therapeutic subjects. He was also an active member of the Glasgow University Club of London. His death took place somewhat suddenly at the comparatively early age of 42 years.

JOHN POLLOCK SIMPSON, M.D. GLASG.,
LONDON.

WE regret to announce the death of Dr. J. P. Simpson, which took place in London on 22nd December, 1914. Dr. Simpson was a student of Glasgow University, where he took the degrees of M.B., C.M., in 1882, afterwards proceeding to Vienna for further study. He thereafter settled in London, ultimately devoting himself to the specialty of diseases of the ear, nose, and throat. He took the degree of M.D.Glasg. in 1892. In London he held the appointment of surgeon in the ear, nose, and throat department to the Battersea General Hospital, and had previously held that of clinical assistant to the Metropolitan Ear, Nose, and Throat Hospital. He was a Fellow of the Medical Society of London, and had also been surgeon-superintendent for the Queensland Government in London.

JOHN NEIL ROBERTSON, M.B., C.M. GLASG.,
ROYAL NAVY.

WE regret to announce the death of Fleet-Surgeon J. N. Robertson, which occurred suddenly at the Royal Naval Hospital, Plymouth, in December, 1914. Fleet-Surgeon Robertson was a graduate of Glasgow University, where he took the degrees of M.B., C.M., in 1885.

CURRENT TOPICS.

APPOINTMENTS.—The following appointments have recently been made:—

Royal Navy (4th January, 1915): Temporary Surgeon D. K. Adams, M.B., Ch.B.Glasg., to *Vivid*, additional for Keyham College, to date 3rd January.

Royal Army Medical Corps (19th December, 1914): To be temporary Lieutenants—John Hanson, M.B., Ch.B.Glasg. (1903); A. B. Cluckie, M.B., Ch.B.Glasg. (1908); Donald Duff, F.R.C.S.E., F.R.F.P.S.G.

23rd December: To be temporary Lieutenants—V. Borland, M.B., Ch.B.Glasg. (1912); F. A. Murray, M.D.Glasg. (M.B., 1905); J. D. C. Swan, M.B., Ch.B.Glasg. (1899); R. M. Craig, M.B., Ch.B.Glasg. (1914).

29th December: *Territorial Force*—1st Lowland Field Ambulance. To be Lieutenants—S. Robertson, M.B., Ch.B.Glasg. (1914); A. Rankine, M.B., Ch.B.Glasg. (1914); R. A. Lennie, M.B., Ch.B.Glasg. (1914).

31st December: To be temporary Lieutenants—D. J. G. Grant, M.B., Ch.B.Glasg. (1903); J. Jack, M.B., Ch.B.Glasg. (1910); E. S. Chapman, M.D.Glasg. (M.B., 1901); G. Macleod, M.B., Ch.B.Glasg. (1909).

2nd January, 1915: *Territorial Force*—Lowland Mounted Brigade Field Ambulance—Major James Bruce, M.B., C.M.Glasg. (1886), to be Lieutenant-Colonel (temporary); Captain F. Gracie, M.B., C.M.Glasg. (1892), to be Major (temporary).

5th January: To be temporary Lieutenants—J. J. Sinclair, M.B., Ch.B.Glasg. (1909); J. B. M'Cabe, M.B., Ch.B.Glasg. (1905).

8th January: To be temporary Lieutenant—C. J. B. Buchheim, M.B., Ch.B.Glasg. (1909).

11th January: *Territorial Force*—Notts and Derby Mounted Brigade Field Ambulance—W. A. Brechin, M.B., Ch.B.Glasg. (1913), late Cadet Lance-Corporal, Glasgow University Contingent Officers' Training Corps, to be Lieutenant.

13th January: To be temporary Lieutenants—J. H. Douglas, M.D.Glasg. (M.B., 1896); D. C. Hanson, M.B., Ch.B.Glasg. (1914).

UNIVERSITY OF GLASGOW: LORD RECTOR'S ASSESSOR.—Mr. Alan E. Clapperton, secretary of Glasgow University Court, has received intimation, through the French Ambassador in London, that President Poincaré, Lord Rector of the University, has nominated Mr. James H. Nicoll, M.B., as his assessor on the University Court. The nomination will be very popular with the students, and is equally certain to be popular with the profession in which Mr. Nicoll holds such a distinguished place.

UNIVERSITY OF GLASGOW: ADDITIONAL EXAMINERSHIPS.—The University Court have appointed Sir Thomas Oliver, M.A., M.D., LL.D., to be additional examiner in medicine, systematic and clinical; and Sir Charles B. Ball, Bart., M.D., to be additional examiner in surgery, systematic and clinical.

UNIVERSITY OF GLASGOW: STUDENTS AND THE WAR.—Our readers will be interested to know that the graduates and students of Glasgow University have made and are making no inconsiderable contribution to the naval and military forces of His Majesty in the present war. The lists of naval and military appointments which we publish from month to month represent the response of Glasgow's medical graduates, and the complete roll of honour which the University is preparing will contain the names of nearly 1,000 graduates in the different Faculties. The University contingent of the Officers' Training Corps, consisting mainly of students of the University and Technical College, had received before the war began about 100 commissions in the Special Reserve or the Territorial Force. Cadets and ex-cadets numbered about 900. On the outbreak of war applications for commissions were invited, and over 500 men sent in their names. Of these more than 300 have received commissions, for the most part in the New Army, although some 70 have gone to the Special Reserve, and other 70 to the Territorial Force in various parts of the country.

A large number of men, both those who had been cadets in the Officers' Training Corps and other students who had done no military training, enlisted in the ranks. As the result of

Lochiel's recruiting campaign among university men an appreciable number joined the 5th Camerons, while to the 6th Camerons the University has supplied one officer from its junior staff, and considerably more than 100 men. Of the latter some 50 have since obtained commissions in other regiments, and it is hoped and expected that other university men will be found to fill their places and to keep up the connection so auspiciously begun.

The work of the Officers' Training Corps has been carried on with the utmost vigour. The Adjutant rejoined his regiment on the outbreak of war, and of the thirteen officers of the Corps six obtained commissions in units liable for service. Of these two joined the R.A.M.C., and are both with the Expeditionary Force; one has been wounded serving with the K.R.R.C.; three are with battalions of the New Army. The Adjutant's work has been done in turn by two officers of the Corps, who have been well supported by their brother officers and by the members of the permanent staff who were allowed to remain. Two recruit squads were passed through their hands in the months of August and September. When the University session began, training was offered not only for those who desired to undertake the obligations of the Officers' Training Corps, but also for all students who were anxious or willing to fit themselves for a possible future call to military service. Only students attending classes were allowed to enrol, since it was absolutely essential that no young man of military age should find in membership of the Corps an excuse for not offering himself at once for military service.

During the last three months 800 students have been undergoing a course of military training at Gilmorehill. This has comprised both drill and musketry at the miniature range. There have been two route marches, in each of which 600 men took part. The names of nearly 100 present members of the Corps have been sent forward for immediate appointment to commissions. A school of instruction was held by the officers of the Corps during the Christmas vacation, and was entered by a very large number; while new squads of recruits are to be enrolled during the remainder of the session. But for the insistence of the War Office on the maintenance of the work of the Corps all the officers would have been serving with the

Forces, and the organisation of the Officers' Training Corps would have been broken up for the time. It is to be noted that the University, through the Principal and the Military Committee, has been the means of sending forward a large number of names of graduates and others who were never members of the Officers' Training Corps for commissions in the various branches of the Services. All this work has been done without any dislocation of the classes at the University, but every consideration will be given to those who break their course in response to the call of what, fortunately for the country, comes to many as the most imperative duty of the moment.

GLASGOW MEDICAL CASUALTIES.—Our readers will learn with much regret that in a list, published in December, of casualties which occurred in October and early in November, and had not previously been reported, there occurs the name of Lieutenant R. F. Young, of the Royal Army Medical Corps. Dr. Roy Young, up to and after the outbreak of the war, until he was called up for duty, was the editor of the "Abstracts" section of this *Journal*, and he held the posts of dispensary surgeon to the Western Infirmary and assistant surgeon to the Cancer Hospital. The bare official announcement leaves one to fear that the wounds may have been serious, but his numerous personal friends will be glad to know that private information reveals them as slight, and that it has not been necessary for Dr. Young to return to this country.

The *British Medical Journal* of 2nd January records that Staff Surgeon L. L. Greig, R.N., who took part in the naval expedition to Antwerp, was among those taken prisoners. Staff Surgeon Greig is a Glasgow man, and a graduate of Glasgow University, where he took the degrees of M.B., Ch.B., in 1905.

THE NEW YEAR'S HONOURS.—The medical profession will be pleased to note that among the recipients of New Year honours at the hands of His Majesty, in a list which is distinguished by the prominence of the names of men of action, several of its members have found a place. The newly instituted Military Cross has been conferred upon four officers of the Royal Army

Medical Corps for distinguished service in the field, while the administrative work of Indian and Colonial members of the profession has been recognised in the Companionship of the Order of the Indian Empire bestowed upon Major S. R. Christophers, M.B., and Colonel G. W. P. Denny, I.M.S.; in the Knighthood which has been granted to Sir H. L. Maitland, M.B., of Sydney; in the Companionship of the Order of St. Michael and St. George awarded to Surgeon Major-General E. Fleet, M.D., Deputy Minister of Militia and Defence, Canada; and in the Privy Councillorship with which the services of Sir William Macgregor as Governor of Queensland have been rewarded. Sir William, though he graduated in medicine at the University of Aberdeen, spent some of his years of medical study in Glasgow, and took the qualification of the Faculty and of the Royal College of Physicians of Edinburgh. In 1908 he became a Fellow of the Faculty, thus binding still more closely the links which he had formed with the city in 1872. His long and distinguished labours as the administrative head of several of our colonies are well known, but until reference was made to it in the *Glasgow Herald* in connection with his recent honour, it was not so generally known that he was also distinguished for phenomenal strength and for great personal daring. The feat which is there recorded—his simultaneous rescue from shipwreck of a woman whose hair he seized in his teeth and of two men whom he carried under either arm—is worthy of the title of “a modern Hercules” which the writer of the paragraph bestows upon him. He received the Albert Medal for it from Queen Victoria, and his gallantry in saving life upon numerous occasions has brought him many other awards. If members of our profession can show such bravery in times of peace, we need be the less surprised, though none the less admiring, at their courage in war.

THE FITZPATRICK LECTURES.—It is, we imagine, altogether unnecessary to direct our readers' particular attention to the brilliant and erudite lectures on “Leper Houses and Mediæval Hospitals,” which, by the courtesy of Dr. Charles A. Mercier, appear in this and the preceding issue of the *Journal*. Dr. Mercier's name is in itself their sufficient recommendation, and any reader who may have failed to notice it in dipping into the

Journal will find himself fascinated into a careful perusal both by the matter and the manner of the author. We are too apt in the strenuousness of these modern days against which we murmur, and in the rush of books which we find no time to read—are we really more strenuous or more over-burdened with literature, by the way, than when Solomon uttered the same complaint, or when over-excitement and over-production were too much for Burton's nerves?—we are too apt to neglect the study of the history of our art in favour of the latest “reaction,” or, at most, to content ourselves with the merest digest of the subject. It follows from this neglect that we regard the practice of the Middle Ages as entirely unscientific, and that we are pleasantly undisturbed in that “guid conceit o’ oursels” which may make for success, but does not contribute to amenity. It will be a startling discovery to many who consider this age of hospitals and of isolation as unsurpassed in charity, and hitherto unapproached in sanitary science, that in the Middle Ages charitable foundations were as widespread, and isolation was even more complete, in the case of leprosy, than they are to-day in the tuberculosis which the fascinating conjecture of Dr. Mercier considers to replace it. And it is useful to remember that even where we have made progress in one direction, the step is often attended with compensatory disadvantages. Modern sanitation, as Mr. Havelock Ellis indicates in his *Impressions and Comments*, no longer offends the nose, but the ancients had no miniature Niagara to advertise their moments of seclusion.

JUBILEE OF DR. P. F. ROBERTSON, MILNGAVIE.—On the occasion of the attainment of his jubilee as medical officer to the parish of Milngavie, Dr. P. F. Robertson was presented with a silver service by the New Kilpatrick Parish Council, whose chairman, Mr. James White, referred in terms of great cordiality to his exemplary performance of his duties, his tact, and his generous response to the calls made upon him by the poor. Dr. Robertson, who was born in Paisley in 1842, studied medicine in Glasgow University under Lister and Gairdner, and took the degree of M.D. in 1863. In the following year he went to Milngavie, and in 1866 he became a Fellow of the Royal Faculty of Physicians and Surgeons. In the fifty years covered by his

activities he has held many appointments, and for many years he conducted a practice covering the whole parish of New Kilpatrick and extending to Strathblane and Blanefield. He has also been a keen Volunteer, and has held the positions of Surgeon Lieutenant-Colonel of the 1st Dumbartonshire Rifle Volunteers, Brigade-Surgeon of the Clyde Volunteer Infantry Brigade, and Senior Medical Officer of the Clyde Defences.

BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.—The Scottish Committee of the above fund has now been formed, and includes the Scottish representatives on the General Committee—The Presidents of the three Scottish Medical Corporations; Sir Thomas R. Fraser, M.D., Professor of *Materia Medica*, Edinburgh University; David Gilmour, Dunfermline, member of Council, Pharmaceutical Society; J. Rutherford Hill, resident secretary, Pharmaceutical Society, Edinburgh; Sir Donald MacAlister, K.C.B., Principal of Glasgow University; J. Yule Mackay, M.D., Principal of University College, Dundee; J. C. M'Vail, M.D., Crown nominee on General Medical Council; William Russell, M.D., Professor of Clinical Medicine, Edinburgh University; Norman Walker, M.D., treasurer, Royal College of Physicians, Edinburgh. Also the following medical men and pharmacists:—John Adams, M.B., Glasgow, member of Council, British Medical Association; Sir George T. Beatson, K.C.B., chairman, Scottish Branch, British Red Cross Society; Sir Halliday Croom, M.D., Professor of Midwifery, Edinburgh University; W. G. Dun, M.D., treasurer, Royal Faculty of Physicians and Surgeons, Glasgow; James L. Ewing, LL.D., Edinburgh, member of Pharmaceutical Society; J. P. Gilmour, Glasgow, chairman of executive, N.B. Branch, Pharmaceutical Society; John Gordon, M.D., president, Aberdeen Branch, British Medical Association; J. R. Hamilton, M.D., Hawick, chairman, Scottish Committee, British Medical Association; R. M'Kenzie Johnston, M.D., treasurer, Royal College of Surgeons, Edinburgh; Ashley W. Mackintosh, M.D., Professor of Medicine, Aberdeen University; T. K. Monro, M.D., Professor of Medicine, Glasgow University; John Playfair, M.D., president, Edinburgh Branch, British Medical Association; J. Scott Riddell, M.V.O., senior surgeon, Aberdeen Royal Infirmary; Ralph Stockman, M.D., Professor of *Materia Medica*, Glasgow University; with,

as hon. secretaries (for Edinburgh and East of Scotland), R. Cranston Low, M.B.; (for Glasgow and West of Scotland), J. Walker Downie, M.B.; and J. Rutherford Hill, resident secretary, Pharmaceutical Society.

Subscriptions should be sent direct either to the treasurers of the three Scottish Medical Corporations, or to J. Rutherford Hill, resident secretary, Pharmaceutical Society, Edinburgh.

THE INFIRMARIES: CHRISTMAS AND NEW YEAR MEETINGS.—

At the annual Christmas meeting of the managers and staff of the Western Infirmary and distribution of gifts to the patients, at which a large company was present, the chairman, Sir Matthew Arthur, referred in the course of his address to the outstanding events of the year, among which the chief was the visit of Their Majesties the King and Queen in July, and the King's gracious consent that one of their wards should be named the King George and Queen Mary Ward. They had treated a greater number of patients, and had had a greater ordinary expenditure, than in any previous year. Lord and Lady Newlands had generously given £25,000 to complete the endowment of the Lady Hozier Convalescent Home, and a lady had also generously given £8,000 to name a ward in memory of her deceased brother and sister. The admission block was approaching completion.

Many of their medical and surgical staff were serving in military hospitals in this country or at the front; Colonel Mackintosh held the very responsible position of Assistant Director of Medical Services in the Lowland Division of the Territorial Force; Miss Gregory Smith was principal matron of No. 3 Scottish General Hospital, Stobhill, where many of their sisters and nurses were working; while some of their nurses were working in France. They were indebted to Mr. James H. Nicoll for a generous donation of £1,000 to defray the expenses of emergency operations upon recruits debarred from enlistment by ailments which could be rapidly cured by surgical operation.

Sir Hector Cameron afterwards addressed the nurses, and Lady Arthur distributed the prizes to those successful in the medical and surgical examinations. The gifts were then distributed in the various wards.

The annual meeting of the managers of the Royal Infirmary with the nurses was held on New Year's Day in the Pathological Institute, Lord Provost Dunlop presiding over a large and representative gathering. The Lord Provost's address to the nurses had special reference to the circumstances of the war, in connection with which many of the nursing staff had been called up for duty; Miss Melrose, the matron, was also principal matron of No. 4 General Hospital, Stobhill. Five of the sisters were with Queen Alexandra's Royal Naval Nursing Reserve; eight were at the front in connection with the Queen Alexandra Imperial Nursing Service Reserve. Miss Thomson, one of the assistant matrons, was matron of No. 4 General Scottish Hospital, and fourteen of the sisters and nurses were also on duty at Stobhill. Miss Melrose had also sent to the front a number of nurses trained in the Royal Infirmary, and who were on the Royal Infirmary Civil Hospital list. There were three nurses with the Royal Red Cross Hospital at Rouen, and one on the Women's Federation Hospital staff. On account of the additional work due to the treatment of wounded soldiers, the nursing staff had been augmented by about 30. There were at present about 250 instead of about 220 in normal times. Nurses trained in the Glasgow Royal Infirmary, and resident in other parts of the country, in America, and in South Africa, on the outbreak of the war wrote offering their services. That was very gratifying, and their services were in many cases accepted. V.A.D. nurses, some twelve in number, were also taken on as probationers. It would be a matter of great satisfaction for the nurses to know how very grateful the soldiers were for all that was being done for them at the Royal Infirmary; their appreciative remarks had been quite cheering. A soldier recently said to one of the lady managers who was visiting the wards that he did not believe there was any other place where they could have done for him what had been done at the Royal. The medical officers of the Infirmary, not including the residents, numbered 75, and of those, 27 were serving on naval, military, or Red Cross hospital duty. One of the resident medical officers who left soon after the outbreak of the war, Mr. William Ebenezer Maitland, M.B., Ch.B., died from wounds received in action in France or Belgium on 24th December.

Mr. James Macfarlane, chairman of the managers, said that the admissions to the Infirmary during 1914 were 9,961, of whom 9,955 were treated to a conclusion. The figures for the previous year were 9,661 admissions and 9,650 treated to a conclusion. The rate of mortality was 9·97 per cent as against 9·6 per cent in the previous year. The total first attendances at the dispensary were 24,956 as against 24,493, and the total attendances 78,349 as against 67,902. The total number of accidents and urgent cases was 16,074, as compared with 16,772 in 1913. In addition to those figures, 327 wounded soldiers had been admitted since the beginning of the war. Of that number, 286 were treated to a conclusion, and 4 unfortunately died. These figures showed that the usefulness of the Infirmary was being maintained.

The New Year's Day meeting of the nurses and governors of the Victoria Infirmary was held, as in previous years, in the board room of the Infirmary, in the presence of a large attendance. Lord Rowallan, the chairman of governors, being unable through illness to be present, Sir John Ure Primrose occupied the chair, and spoke in the course of his address of the duty of steadfastness, and of the need, in the present emergency, for the avoidance of internal strife. The people of this country, he said, had been doing a great deal for suffering humanity notwithstanding the time of stress. The nurses, especially, were engaged in a great and noble calling. There could be no dedication of their lives more noble, or that would bring a feeling of greater satisfaction, than that of the tending of the sick and wounded. He trusted that in times of great financial stress the heart of Glasgow and of the kingdom would ever respond to the call for support to such institutions as their infirmaries. He spoke in terms of appreciation of the work of the nurses, whose services helped to make that institution stand pre-eminent among the other noble institutions of a kindred nature in Glasgow. The Tradeston Dispensary was a most valuable adjunct to the Victoria Infirmary. During the past year 26,000 consultations took place. That indicated work which reached every section of the community, and the benefit, comfort, and joy it brought in its train were incalculable.

The proceedings closed with the singing of the National

Anthem. The company afterwards had an opportunity of visiting the Nurses' Home and the wards.

LADY HOZIER HOME: PRESENTATION TO LORD AND LADY NEWLANDS.—On the occasion of the completion of the endowment of the Lady Hozier Convalescent Home, Lanark, by Lord Newlands' gift of £25,000, the Managers of the Western Infirmary presented Lord and Lady Newlands with an illuminated address, the ceremony taking place at the Home on 18th December. Sir Matthew Arthur occupied the chair, and made the presentation, recalling that the gift had been made in commemoration of the visit of their Majesties the King and Queen to Mauldslie Castle in the summer of last year, and expressing the heart-felt thanks of the Managers to Lord Newlands, both for his most generous gift and for the liberality of the arrangements he had since made to give effect to his wishes both for the permanent endowment and in meeting the deficit of last year. The Managers rejoiced that the Home was now an integral part of the Western Infirmary, and they were very glad that it was agreeable to Lord Newlands that it should be used for the accommodation of wounded soldiers and sailors. Colonel J. A. Roxburgh, as chairman of the House Committee, associated himself with the expressions of gratitude to Lord and Lady Newlands for what they had done for the home.

Lord Newlands, in acknowledging, expressed the deepest gratitude for the honour done to Lady Newlands and himself, an honour which he fancied was almost unique. On this occasion they honoured not only his wife and himself, but also his father and his mother. The Lady Hozier Convalescent Home was built, equipped, and partially endowed by his father in memory of his mother, and his wife and he had merely put on the coping-stone by completing the endowment of the hospital, and so enabling it to be entirely self-supporting, and therefore a blessing instead of—as it sometimes in the past must have been—a burden to the great hospital at Glasgow of which it was now an integral part. For nearly a quarter of a century this Convalescent Home had been doing invaluable work, and he was delighted to think that his friend, Colonel Mackintosh, who so fully represented the Western Infirmary,

appreciated the usefulness of this Home possibly more than anyone else. At the present moment its work was, if possible, more valuable than ever, because, thanks to the wisdom of the Managers, it was at the present moment devoted to the restoration to health of convalescent soldiers and sailors, amongst whom they were indeed delighted to welcome a large number of our glorious Belgian Allies. He ascribed the super-excellent work of this Convalescent Home to the superexcellence of its management. Long might the Home continue to be able to claim with justice and with truth to have as its motto the great motto of the Royal Scots Greys—"Second to None."

VICTORIA INFIRMARY: ANNUAL REPORT.—The twenty-seventh annual report of the Victoria Infirmary, Glasgow, was submitted at the annual meeting of the Court of Contributors, held on 3rd December, in the Merchants' House. It stated that the daily average number of resident patients was 260, as compared with 253 in the previous year, and their period of residence was respectively 25·7 days and 26·7 days. The total number of patients treated in the wards was 3,959, as compared with 3,708 in the previous year, being an increase of 251. There were no vacant beds at any time during the year, and, generally, there were from 200 to 290 patients waiting for admission. Of the cases treated to a conclusion, 336, or a percentage of 8·9, died. Deducting, however, 111 cases which were of such a serious nature that the patients died within forty-eight hours of admission, the death-rate was reduced to 6·2. The percentages for the previous year were 9·02 and 7·09 respectively. In addition, 812 cases of minor accidents were treated surgically. These were of such a nature as not to require the retention of the patients in the Infirmary. X-ray and electrical treatment formed an important part of the work carried on in the Infirmary. During the past year the average number of patients treated daily was 19, involving 5,966 consultations, as compared with 21 and 6,549 respectively for the previous year, and the results had been very satisfactory. At the urgent request of the War Office to provide accommodation for wounded soldiers, two wards were set aside for this purpose, and these had been occupied by wounded Belgian soldiers from the front. The soldiers had all made good progress towards recovery, and

had greatly appreciated the care and attention bestowed on them. At the Infirmary Dispensary for outdoor patients, 3,248 individual cases were dealt with, involving 11,757 consultations. The corresponding numbers for the previous year were 3,380 and 11,294 respectively.

The following comparative figures show (1) the average daily number of patients; (2) the average cost per patient; (3) the average cost per occupied bed; and (4) the average length of residence per patient during the past year and the previous year, viz.:—

	(1)	(2)	(3)	(4)
1912-13, .	253	£4 18 3	£71 19 9	26·7 days.
1913-14, .	260	4 18 6	75 0 3	25·7 „

The Bellahouston Dispensary continued to be a great boon to the sick poor on the south side of the city. During the past year 8,450 patients, involving 24,616 consultations, were treated, as compared with 8,427 patients and 24,802 consultations during the previous year.

The Home at Largs continued to be a valuable adjunct to the Infirmary. During the year, 660 patients in a state of convalescence had been transferred to it from the Infirmary, being an increase of 3 on the previous year.

The ordinary income from the Infirmary, Bellahouston Dispensary, and Convalescent Home was, in 1913-14, £13,115, 17s., as compared with £12,744, 13s. 5d. in 1912-13; and the ordinary expenditure from these sources was, in 1913-14, £21,382, 3s. 6d., as compared with £19,968, 5s. 8d. There was therefore a deficit of ordinary income during the past year amounting to £8,266, 6s. 6d. The extraordinary income, however, from legacies and donations came to £23,294, 14s. 10d., and the extraordinary expenditure to £3,577, 4s. 8d., leaving a surplus of £19,717, 10s. 2d., and a surplus of total income over total expenditure of £11,451, 3s. 8d., as compared with a similar surplus of £9,429, 16s. 4d. in 1912-13.

The governors were gratified to note an increase in employees' subscriptions by the substantial sum of £134, and in Church and Hospital Sunday contributions by the sum of £54. After meeting from the extraordinary income the deficit on the ordinary income and other charges, a balance of £11,077 had been carried to capital account.

No additional beds had been endowed during the year. The late Miss Jeannie Pollok and Mrs. Janet Gilchrist had left a sum of £10,000 to name a ward in the Infirmary in memory of their brother, the late Dr. Robert Pollok, who was one of the governors of the Infirmary for sixteen years. A ward would accordingly be named "The Dr. Robert Pollok Ward." Since the close of the financial year the Rev W. H. Carslaw, D.D., had given a donation of £100 to name a cot to be called "The Carslaw Cot in memory of Douglas and Kathleen." This was the first cot in the Infirmary to be named. Owing to the great demand for accommodation in the Infirmary the governors had arranged to erect another pavilion to accommodate 80 patients, plans for which had been prepared by the architects, and an appeal was about to be issued for funds to carry out this much-needed addition, but on the declaration of war it was not considered advisable to proceed with the work in the meantime.

In proposing the adoption of the report, Lord Provost Dunlop, who occupied the chair, said that he was delighted to find that in spite of the strenuous times their hospitals appeared to be in a very healthy condition. It was gratifying that the governors of the Victoria Infirmary had alleviated suffering to a greater extent than in the previous year, and also that they had been able to take a share in caring for the wounded soldiers. They were face to face with the possibility of a decrease in subscriptions in the future, but he did not believe that the citizens of Glasgow would allow their subscriptions towards the hospitals to decrease. He held the view that that great war was educating them in something with regard to which they were not sufficiently educated. That was in the pleasure of giving. It was a pleasure to find that large sums of money had been subscribed for many purposes since the war began, and he could not think for a moment that the people would starve their own institutions because of that. He believed that the sense of giving which had been stirred up in each of them would be lasting, and that, realising the pleasure of giving, the citizens would continue to give long after the war was finished. He hoped that before very long they would generously support the contemplated addition to the Infirmary, so that the institution might continue its great and beneficent work.

Colonel Roxburgh, who seconded, said it was very pleasing that, in a year when one might have expected that things would not be going so well as usual, they had been able to carry a very considerable sum to capital account. That would be a nest egg for them against any possible rainy day. There was no doubt that admissions to all hospitals were very great, and were increasing. The Western Infirmary, which had something like 600 beds, had between 700 and 800 people waiting to get in, and he noticed that the proportion at the Victoria was very much the same. The working man was learning now that unless he helped to keep the infirmaries going there was no way for him to receive that hospital benefit which he required. When the Insurance Act first came into operation there was an idea that there would not be the same need for the infirmaries, but that view had been found to be mistaken. Probably, owing to the panel doctors finding out many suitable cases for the infirmaries, instead of its being the case that fewer people were waiting for admission there were more, and he believed the number would continue to increase. If the best results were to be obtained from the Insurance Act there was no doubt that it would be necessary to increase the hospital accommodation. They would be very sorry to see the voluntary principle in any way interfered with. He was sure the public spirit of the community would be sufficient to carry on the hospitals in the future in the same way as in the past.

A vote of thanks to the donors and subscribers was proposed by Sir A. H. Pettigrew.

Mrs. D. M. Alexander, Mrs. J. H. Robertson, Mr. John Fleming, and Mr. William Beattie, the retiring governors elected by qualified contributors, were re-elected, and, on the motion of Provost Rodger, Rutherglen, the Lord Provost was awarded a vote of thanks.

CENTENARY OF THE GLASGOW ROYAL ASYLUM.—On 12th December, 1914, the managers of the Glasgow Royal Asylum, which now occupies the fine buildings and policies of Gartnavel, celebrated its centenary by the distribution of bonuses to all members of the staff, the public celebration which had been contemplated being suffered to lapse on account of the war. The institution owes its origin to Mr. Robert M'Nair, of Belvidere,

a director of the old Town's Hospital, who was brought in the course of his directorate into touch with the miserable lot of the insane of the city, and by his personal exertions collected a sum of £7,000 to be devoted to their relief. The foundation stone of the Glasgow Asylum for Lunatics was laid in 1810, and the building was opened in 1814. It was situated in the Townhead district, and at a later date became the Barony Poor-house in Parliamentary Road. When it was first opened it was remote from the centre of the city and surrounded by a country landscape, but the extension of Glasgow so rapidly encompassed it that twenty-five years afterwards it was recognised to be necessary to transfer the Asylum to the west. Ground was acquired at Gartnavel, and the new buildings there were opened in 1843.

The Glasgow Royal Asylum is famous as being among the earliest of the institutions devoted to the humane and scientific treatment of the insane, and it has been famous from a very early period of its history as being among the best of them. Its medical interests have been presided over by a series of able alienists—Cleghorn, Balmano, Mackintosh, Yellowlees—two of whom, Drs. Balmano and Yellowlees, have been Presidents of the Faculty of Physicians and Surgeons, while it was in memory of Dr. Mackintosh that the Mackintosh lectureship on mental disorders at Queen Margaret College, and the Mackintosh bursary for the same subject at the University, were founded by his brother. The Asylum has always commanded the sympathetic interest of the inhabitants of Glasgow, many of whose most prominent citizens have served upon its directorate. It was at first intended for the reception both of rate-supported and of private patients, and its *clientèle* was, until fifteen years ago, drawn from both classes; but since the opening of the district mental hospitals it has been devoted solely to the latter class, of whom about 450 are at present within its walls.

The century during which the Glasgow Royal Asylum has been in existence has seen a revolution in the treatment of the insane. The worst forms of inhumanity ceased to be practised soon after its foundation, but for some time afterwards the lunatic was regarded rather as an object for commiseration than as one whom it might be possible to cure. His lot was ameliorated; he was free from penalties; chains and the strait

waistcoat were replaced by kindness; and mental disorders were clinically differentiated. But because the interdependence of mind and brain was imperfectly realised, he was still regarded as in some sort a thing apart, for whom curative treatment was waste pains, and by the laity at least he was looked upon with something of the awe and fear with which the primitive races still surround him. It is within quite recent times that mental aberrations have been correlated with structural change, and that modern methods of research have thrown light upon the early processes of abnormal mentation. The new century in the history of the Glasgow Royal Asylum opens with a message of hope, and with the prospect that the treatment of the insane, begun in the earliest stages of their aberration, will lead to better results in the way of recovery than have ever yet been reached.

PORT-GLASGOW HOSPITAL.—Intimation has been received by the Treasurer of the Broadstone Jubilee Hospital, Port-Glasgow, that the late Mrs. John Birkmyre of Broadstone has under her settlement bequeathed a sum of £5,000 to the funds of the hospital. With this handsome addition the accumulated funds of the hospital will now exceed £21,000. The hospital was built and partially endowed by the late Mrs. Birkmyre and her husband, Mr. John Birkmyre of Broadstone. Including the cost of building and equipment and the sums formerly given towards endowment, the total amount expended by Mr. and Mrs. Birkmyre in connection with their gift of the hospital and its endowment has exceeded £50,000.

GLASGOW SAMARITAN SOCIETY.—The fortieth annual meeting of the Glasgow Samaritan Society in connection with the Western Infirmary was held on 17th December in the Infirmary, Colonel Smith Park, M.V.O., presiding.

Colonel Smith Park, in the course of his address, said that the total subscriptions for the past year were £90 short of the expenditure—a fact which he did not consider creditable to the Second City of the Empire. He thought it would be worth while putting forward an application to the Corporation for a grant, and they might also appeal to the secretaries of the

committees of public works who had the disbursement of the large sums collected for charity, for their society was eminently deserving of the support of the working classes.

The report of the president and Ladies' Committee stated that in spite of the terrible stress of this winter and the consequent numerous extra organisations for relief new members were coming forward to visit the wards and to help in the work generally. During the year 460 persons were assisted, many receiving 2s. 6d. per week for a month or longer. Ten grants for rent amounting to about £8 were made, and £37 was paid for the board of children at Strathblane Home, Patients' travelling expenses to Dublin, Thurso, and Huddersfield were defrayed, 1,285 articles of clothing were distributed, and about 50 people received assistance to purchase surgical appliances and artificial limbs.

Mr. Sloan submitted the financial statement, which showed an income of £388, including the balance of £50 brought forward from last year. The expenditure amounted to £334, leaving a credit balance of £54. The capital of the Society had been increased by legacies amounting to £121, and now stood at over £3,077. Mr. Sloan pointed out that if the investments were realised on the present market the capital would show a depreciation of about £300, but he did not think there would be any necessity to realise.

The Rev. Mr. Gardner moved, and Mr. James Wyper seconded, the adoption of the report, which was agreed to.

On the motion of Dr. J. Mill Renton the following office-bearers were elected:—President, Mrs. Binning; Vice-Presidents, Lady M'Call Anderson, Miss Bell, Mrs. Berry, Mrs. Edward Caird, Lady Gairdner, Lady M'Leod, Lady MacAlister, Lady M'Innes Shaw, Mrs. Storey, Miss A. D. Stewart; Honorary Acting Treasurer, Miss A. C. C. Scott; Honorary Acting Secretary, Mrs. Wyper; Honorary Superintendents, the Misses Stuart; Honorary Auditor, Mr. D. Norman Sloan, C.A.; Almoner, Miss N. M'Culloch.

LITERARY INTELLIGENCE.—Messrs. Smith, Elder & Co. published on 21st January *The Early Diagnosis of Heart Failure, and other Essays on the Heart and Circulation*, by Dr. T. Stacey Wilson, senior physician to the General

Hospital, Birmingham. The volume is illustrated by over 130 original diagrams, showing the results of auscultation and of percussion of the heart and liver in cases of cardiac inefficiency, and 30 figures, showing cardiac tracings. It contains a great deal that is absolutely new with regard to simple methods of diagnosis of heart failure, and is furnished with complete indexed summaries, and with a full subject index, in order to make it convenient for reference.

The fifth edition of Duff and Candy's *Manual of Chemistry*, revised and enlarged by Mr. Candy, is announced for immediate publication by Messrs. Cassell & Co., Limited. Much of the additional matter relates to the theory of ionisation and some of its consequences. Typical instances of the law of mass action and its relation to chemical equilibrium are also discussed at some length. The section on volumetric analysis has now been extended to include the volumetric aqueous solutions of the new *British Pharmacopœia*.

We are requested to announce that the French medical journal, *Paris Médical*, edited by Professor Gilbert, resumed publication on 2nd January, and devotes particular attention to military medicine. Its first number contains articles by Professor Hartmann on military surgery, by Professor Dopter on the prevention of cholera, and by Dr. Milian on the hypnosis of battle. It appears in fortnightly numbers of 28 pages each, at a reduced price of 3.50 fr. for a six months' subscription. The offices of the *Journal* are at 19 rue Hautefeuille, Paris.

REVIEWS.

Dietetics, or Food in Health and Disease. By WILLIAM TIBBLES, LL.D., M.D. (*Hon. Causa*) Chicago, L.R.C.P. Edin., M.R.C.S. Eng., L.S.A. Lond. London: Baillière, Tindall & Cox. 1914.

WE welcome this volume from the author of *Foods: Their Origin, Manufacture, and Composition*. His industry is great, and his results, as shown in the volume under review, are excellent. Naturally, no two medical men, far less two experts in dietetics, will agree at all points anent the matter dealt with in this book, but on the whole it is to be recommended most thoroughly as a standard and a book of reference that should be possessed by all medical men.

The book deals very fully with the subject, and is divided into two parts. In the first part a more general discussion of the subject takes place under headings such as food values, processes of digestion and absorption, heat value of foods, amounts of food required in many circumstances, feeding at various ages, &c. In the second part the regimen for particular diseases is given, and the therapeusis is to a considerable extent rational, in so far that the author tries in many cases to give definite physiological reasons for his recommendations, and he often quotes authorities in support.

There is no need to paint the lily; the book is an excellent one.

Mental Deficiency (Amentia). By A. F. TREDGOLD, L.R.C.P., M.R.C.S. Second Edition, Revised and Enlarged. London: Baillière, Tindall & Cox. 1914.

THE first edition of this book met with a very favourable reception from the medical press and from the medical public, and but few words are necessary in commendation of its

successor. It preserves in its new form all those qualities which made for the success of the earlier edition; it is full, accurate, and striking; and it conveys just the information with regard to mental deficiency which, in view of the recent Act, it is so necessary for practitioners to possess. Mr. Tredgold possesses the gift of graphic description, and his book will be found not the less fascinating to read in that it combines careful scientific observation with a broad spirit of humanity. It is warmly to be commended to all who are interested in the mentally deficient.

The Students' Pocket Prescriber and Guide to Prescription Writing. By H. AUBREY HUSBAND, M.B., C.M., B.Sc., F.R.C.S.E., M.R.C.S. Fourth Edition. Edinburgh: E. & S. Livingstone. 1914.

THIS book contains four hundred and eighty-seven prescriptions, written in unabbreviated Latin, arranged under the names of diseases. The diseases are grouped in the usual fashion. An introduction on prescription writing, a Latin vocabulary, tables of weights and measures, &c., are included and add to the usefulness of the little volume. It is of a size to fit the waistcoat pocket, and is quite good as a guide for students.

Diseases of the Stomach and their Relation to other Diseases. By CHARLES G. STOCKTON, M.D. New York and London: D. Appleton & Co. 1914.

IN this book, written not so much for the gastric specialist as for the "internist" and the general practitioner, Dr. Stockton maintains the standpoint that the gastric specialist, valuable as his labours are at present, is a temporary institution, likely to disappear when the "internist" is ready "to devote to gastric pathology close study and a broad view." The notable feature of his book is consequently not so much the description of gastric diseases and their treatment, which it has in common with other

manuals of the subject, as the way in which he develops his conception that gastric diseases bear a close relation to other bodily disorders, and advocates measures of treatment of the diseased stomach which are not purely local, but which are directed to the general etiology of its disorders. There is much to be said for the point of view which he defends; if a general examination of the patient were made in every instance it would be impossible, for example, that a gastro-enterostomy should be performed in a case of the gastric crises of locomotor ataxy. Such mistakes are recorded because the specialist is apt to think only of the stomach when he seeks an explanation of gastric symptoms. But the arguments for and against specialism have often been stated, and each side holds to its own opinions. Dr. Stockton is on more certain ground when he points out that the "internist" with only a general knowledge of gastric pathology is but imperfectly equipped; and his book will do much to redeem that imperfection for those who study it. Its strongest point, perhaps, is its suggestive handling of the important subject of treatment, but it is also to be commended from the point of view of symptomatology. It is written in a flowing style that makes it easy to read; it is well printed; and it is adequately supplied with illustrations of very considerable merit. Particularly to be commended are those which demonstrate the great assistance afforded by the *x*-rays in gastric diagnosis.

The Salvarsan Treatment of Syphilis in Private Practice, with some Account of the Modern Methods of Diagnosis. By GEORGE STOPFORD-TAYLOR, M.D., M.R.C.S., and R. W. MACKENNA, M.A., M.D. London: William Heinemann. 1914.

THIS little volume is based upon the conclusions arrived at after more than three years' experience of the use of salvarsan in private practice. It is divided into four chapters, the first of which deals with the spirochæte, and with the Wassermann and luetin reactions. The second is given to a consideration of dementia paralytica and tabes dorsalis, and of the results of intrathecal injection of salvarsanised serum in these conditions. The third deals with the salvarsan treatment of the ordinary

form of syphilis, and discusses the technique of intramuscular and intravenous injections. The latter of these is the method now constantly employed by the authors. The final chapter is devoted to the combined method of treatment, which the authors advocate as the method of election. They follow up an injection of salvarsan by ten or twelve intramuscular injections of grey oil, given once a week. A series of photographs illustrating the effects of salvarsan upon the external manifestations of syphilis closes the volume, which will be found of much service to any practitioner who has occasion to employ this method of treatment.

A Practical Handbook of the Tropical Diseases of Asia and Africa. By H. C. LAMBERT, M.A., M.D. London: Charles Griffin & Co., Limited. 1914.

IN the opening sentence of his preface the author says:—"This book embodies the experience gained by residence in various parts of the tropics, and aims at being a concise and practical manual." And he who reads—or consults—this handy volume will be ready to acknowledge that the author's aim has been attained, for the book is certainly concise and practical. The writer speaks with the authority of a man whose knowledge is based on practical personal experience.

The descriptions of the various diseases are clear and comprehensive, but without redundancy. Treatment receives a full share of attention, and a collection of formulæ which have been found useful by Dr. Lambert will be found in the therapeutic index. Etiology, pathology, and morbid anatomy are also carefully attended to, and the reader will find in the section devoted to "Bacteriological methods" plain directions for the culture and staining of the various micro-organisms. In the section "Protology," the *Trypanosoma gambiense*, *Leishmania donovani*, and the various forms of the malarial parasite are dealt with, and two coloured plates are devoted to the illustration of the last named.

Dr. Lambert's work is full of information, and will be found a useful companion by anyone engaged in the practice of tropical medicine.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

M E D I C I N E.

The Association of Erythema Nodosum and Tuberculosis. By O. H. Foerster, M.D. (*The Journal of the American Medical Association*, 10th October, 1914).—During the past few years numerous instances have been recorded of the association of erythema nodosum with tuberculosis, especially in children. It appears that in many instances an attack of erythema nodosum has been followed directly or within a short period by the development of an acute tuberculous process in the lymphatics, pleura, meninges, or other structures. As long ago as 1872 Uffelmann called attention to the grave significance frequently attached to erythema nodosum occurring in children of tuberculous ancestry. The question of the etiology of the disease, however, still awaits solution, and the views held by different authors differ widely. Foerster is of opinion that the close association of erythema nodosum with tuberculosis in the many cases recorded in the literature must be more than accidental. He records two cases, both following measles, in one of which cervical adenitis, possibly tuberculous, came on after the erythema, and in the other an eruption of tuberculides and an attack of tuberculous meningitis, which caused death within three weeks.

—ADAM PATRICK.

The Four Common Types of Heart Disease. By Richard C. Cabot, M.D. (*The Journal of the American Medical Association*, 24th October, 1914).—The writer is dissatisfied with the common classification of heart disease according to the lesion which is produced, and thinks that more account should be taken of the etiology of the condition. "Mitral regurgitation," he says, is almost as vague a phrase as "spinal paralysis" or "brain fever." A similar criticism applies to all diagnoses of "myocarditis"—they call for an etiological qualification such as "tuberculous" or "syphilitic." The question has a practical aspect, for prognosis depends on the cause as well as the nature of any lesion.

The writer has attempted a classification of 600 recent hospital cases in which failing heart was a prominent feature, and summarises his results. Ninety-three per cent of these 600 cases were found to group themselves into four classes—rheumatic, syphilitic, arterio-sclerotic, and nephritic. Five per cent could not be thus classified, and the remaining 2 per cent were "goitre" hearts. Of the

278 rheumatic cases, 61 per cent were females and 39 per cent males. Sixty per cent of these rheumatic cases began before the twenty-second year. The typical rheumatic heart patient is therefore a young girl. Of the 74 syphilitic cases, 70 per cent were men and 30 per cent women. The typical syphilitic heart patient is a middle-aged man (average age 47), with aortic regurgitation and no rheumatic history. The 93 arterio-sclerotic patients averaged 59 years of age; the 117 glomerulo-nephritics averaged 36 years. The sexes were about equally represented in the two groups. Practically all the stenoses belonged to the rheumatic group.—ADAM PATRICK.

Pilocarpine in High Blood Pressure. By William Duffield Robinson, M.D. (*New York Medical Journal*, 7th November, 1914).—For the past several years, the writer says, he has used pilocarpine in practically all cases of hypertension of blood-vessels without marked cardiac hypertrophy, with very gratifying results in nearly all instances. Its use gives evidence of modifying the cause of hypertension. The starting dose for adults in fair condition is one-thirtieth of a grain in a glassful of water after meals. This occasionally has to be reduced still further, seldom increased, to secure a gradual decrease in blood-pressure amounting to about 30 to 40 mm. of mercury after four to six weeks' administration. In one case an idiosyncrasy seemed to exist, so that the dose had to be reduced to one-hundredth of a grain, well diluted, after meals. The writer quotes Dr. Samuel West, who states it as his observation that "of all drugs for chronic renal disease, I think pilocarpine the most useful."

—ADAM PATRICK.

OBSTETRICS AND GYNÆCOLOGY.

Hysterectomy for Concealed Accidental Hæmorrhage. Dr. Jellet (*Dublin Jour. Med. Sc.*, November, 1914), at a meeting of the Royal Academy of Medicine in Ireland, showed a uterus which he had removed from a patient, aged 25 years, who was admitted to the Rotunda Hospital in May, 1914. This was her sixth pregnancy, and on the day of admission she had suffered from hæmorrhage for which she had been plugged before being sent to hospital. Her pulse was 104 and she looked fairly well, so the plugs were removed; shortly after, however, some bleeding occurred, and the patient was most emphatic in asserting that the uterus had become larger. She was extremely anæmic and appeared unable to stand any loss of blood. As the diagnosis of concealed hæmorrhage was established, the abdomen was opened and the uterus was removed; the uterus was thicker at the site of the hæmorrhage than elsewhere; the patient did well.

In the discussion which followed Sir William Smyly, Dr. Sheill, and the President (Dr. Gibson) agreed that the treatment was correct, and that, in most cases at anyrate, the hæmorrhage could not be otherwise arrested; though Dr. Sheill pointed out that the condition of the uterine wall mentioned above disposed to the view that plugging might also have been satisfactory.—E. H. L. O.

The Serum Diagnosis of Pregnancy.—Jellinghaus and Losee contribute an article to the *Bull. of Lying-in Hosp. of the City of New York*, June, 1914, on Abderhalden's reaction. They go into the details of the very

complicated technique required, and of the many controls necessary. They admit that the dialysation method has not proved infallible in their hands, though some observers claim to have had good results. Accordingly, they cannot recommend the method for diagnostic purposes. Much of the literature recommending the test is not convincing, for articles which say nothing about controls are of no value. Writers making fantastic claims are not to be considered seriously—for instance, those who claim that they can tell whether or not a woman has had intercourse by using spermatozoon instead of placental albumen. It is doubtful if the claim can be maintained that the serum of eclamptic women contains less ferment than that of normal women, and therefore gives a weaker Abderhalden's reaction, for the difference is based upon the intensity of the colour; for it must be remembered that three seconds more of boiling in a normal case will produce a deeper colour, and the authors did not find such weaker reactions with the serum of eclamptics. A drug firm has sent out a box containing an outfit for this test, but the authors are of opinion that the powdered placental albumen is useless; a stable placental albumen has not yet been obtained. If such an outfit be used, many worthless records will be published.

The authors maintain that five controls are necessary, namely, (1) the serum to be tested inactivated with placenta; (2) a known pregnant serum with placenta; (3) the same known pregnant serum inactivated with placenta; (4) a known non-pregnant serum with placenta; (5) the same known non-pregnant serum inactivated with placenta. For inactivating the serum it is placed in a test-tube and kept in a water bath at 60° C. for thirty minutes.

As to the interpretation of the reaction, they give four rules—

1. Placenta and serum giving a negative ninhydrin reaction, when its control with inactivated serum and placenta also gives a negative reaction, is considered non-pregnant.

2. Placenta and serum giving a positive ninhydrin reaction, when its control with inactivated serum and placenta gives a positive ninhydrin reaction of the same intensity, is still considered non-pregnant.

3. Placenta and serum giving a positive ninhydrin reaction, when its control with inactivated serum and placenta gives a negative ninhydrin reaction, is considered pregnant.

4. Placenta and serum giving a positive ninhydrin reaction, when the control with inactivated serum and placenta gives a positive ninhydrin reaction, but of a distinctly lighter shade than the placenta and serum, is still considered pregnant.—E. H. L. O.

DISEASES OF THE EYE.

Some Points in Connection with the Operation of Sclero-Corneal Trephining. By R. H. Elliot, M.D., F.R.C.S. (*The Ophthalmoscope*, October, 1914).—In this paper the author deals with some of the difficulties and dangers of the operation of trephining. The vesicular type of filtration scar is one to be guarded against. There is always the risk of abrasion of the prominent surfaces during movements of the globe; and organisms lying in the conjunctival *cul-de-sac* may pass through the thin covering of such a scar even without rupture having taken place.

The flap must be as large as possible, and the incision reach almost to the fornix, with its extremities kept well away from the limbus. The conjunctival incision is not necessarily concentric with the cornea; but it should be slightly concave downwards, *i.e.*, towards the cornea. The whole area outlined by the flap must not be dissected up, since the flap would then fall over the cornea unless stitched to keep it in place. The aim is not to form a lake under the flap, but to obtain a wide area for slow filtration, in which the meshes of the tissue are damaged as little as possible, in order to avoid the formation of fluid reservoirs or cicatricial bands running between the flap and its bed. The path of dissection resembles a truncated triangle, very wide above, and gradually narrowing below until it reaches the cornea, where the width is only sufficient for the subsequent stages of the operation. While the upper half or more of the flap need include little more than the conjunctiva itself, the last few millimetres should lay bare the sclera. In this way the base of the flap is made as thick as possible.

The splitting of the cornea is done by splitting and not by cutting. The corneal flap must include a few corneal lamellæ, and be of such a thickness as not to lead to the vesicular type of scar. It has to contain therefore rather more than corneal epithelium and Bowman's membrane. This *technique* may give a "pad-formation filtering scar;" but with a thick covering, and not the thin-walled projecting vesicle which is so dangerous. In a good result the filtration scar has a smooth and even covering of conjunctiva, which passes insensibly from the neighbourhood of the trephine hole to the surrounding area, yet gentle pressure with the spud shows that free and abundant filtration is taking place. Many old eyes, and also those suffering from chronic obstruction to the venous outflow as in glaucoma, pit on firm pressure with a spud; but there is no difficulty in distinguishing the œdema in these cases. In the filtration cases it is more fluid and more strongly marked. When the œdema is so little marked as to lead to confusion, the author believes that the filtration it represents is of little value to the patient.

Impaction of uveal tissue in the trephine hole may take place:—(1) As the result of injudicious traction during the iridectomy; (2) in consequence of a sudden movement of the patient at the time; (3) owing to a forward movement of the structures lying behind the diaphragm of the eye, which mechanically push the uveal tissue into the wound and block them there; and (4) as a result of the iris becoming washed into the hole by the fluid which is making its way from the anterior chamber to the subconjunctival space. The last named factor comes into play after the patient leaves the operation table. The author advises the making of a peripheral button-hole iridectomy opposite the trephine hole to allow of the escape of the aqueous fluid, thereby avoiding the risk of the iris being washed into the wound. The iridectomy should be performed with the same snip of the scissors that divides the hinge of the disc, for the firm grip on the disc enables the operator to steady the eye whilst the iris is being cut across, even although the patient may be troublesome and restless.

When impaction of the iris has actually occurred, this may be due to the tissue having been dragged into the wound, or having been pushed there by the pressure of structures behind. If there is a sudden hardening of the eye whilst the patient is still on the table, the condition is due to an effusion (probably from the choroidal veins) into the posterior segment of the eye, and the patient should be quietly put back to bed. On the other hand, if the eye has remained soft, it is not difficult to effect replacement of the uveal tissue with a spud, should the irrigator stream alone prove insufficient.

To control the result obtained by gradation of the piece of sclera removed, the blade of the trephine should cut through first on its corneal edge. To effect this the instrument should be sloped towards the patient's feet. The disc, hinged on its scleral side, will then be pushed forward by the prolapsing bead of iris. These are then seized in a single grip of the forceps, and cut across at right angles to the surface of the disc. If only a small opening is required the entire disc is not removed. Variations can also be obtained by the use of larger trephines than the 2 mm. trephine recommended for the above procedure.

With regard to late infections the author points out that a very large number of trephinations have been performed, as shown by over 500 references in the literature of the last three years. There are only fourteen cases recorded, some of which may be looked on as ordinary operation infections, or as having followed blows and other injuries. Late infections are recorded after other operations besides trephining, *e.g.*, after cataract extraction, after Lagrange's operation, &c. The possibility of a fistulette somewhere along the line of the original conjunctival incision should not be forgotten. A touch of silver nitrate solution suffices to close it.—W. B. INGLIS POLLOCK.

DISEASES OF THE EAR.

Gun-Deafness and Its Prevention. By Jobson Horne, M.D., B.C. Cantab. (*The Lancet*, 15th August, 1914).—"Deafening" is a term which, when applied to a loud and sudden noise, cannot be regarded as a mere hyperbole of speech. The injurious effect of loud noises on the hearing apparatus is common knowledge, and the best example of it perhaps is the form of deafness met with among boilermakers. The shriek of a railway whistle, especially when passing through a covered station, may produce a serious deafness.

The injurious effects of the shock or the concussion resulting from exposure to firing of artillery are upon the terminal portion of the nerve structures of the ear, and the damage done to the internal ear may result in irremediable deafness. At times the concussion may be so severe as to cause even rupture of the drum membrane.

Dr. Horne quotes from the statistics of Surgeon-General Suzuki, of the Imperial Japanese Navy, who, as surgeon-in-chief of the combined fleets, served on board the flagship under Admiral Togo in the Russo-Japanese war. In that paper he states that he received from the surgeons serving in the fleets many reports as to rupture of the tympanic membrane and concussion of the labyrinth of the ear during firing. It appears that the total number of casualties in the Japanese navy from February, 1904, to August, 1905, was 3,682; of these, 1,891 were killed outright, and 1,791 were wounded, of whom 117 died later from their wounds. The list of wounded includes 116 cases of concussion of the labyrinth and rupture and congestion of the tympanic membrane, which is approximately 7 per cent of the wounded who survived.

Injuries to the ears with serious impairment of the hearing, and in some cases irremediable deafness, must be looked for amongst soldiers and sailors exposed to the firing of modern artillery, and to the explosions of the shells used in modern warfare.

Can these injurious effects be prevented?

Dr. Horne refers to the prophylactic measure of keeping the mouth open during gun-firing so as to equalise the atmospheric pressure on both of the tympanic membrane. Where there is obstruction of the Eustachian tube gun-deafness is more likely to occur.

As a further protection, plugging of the external meatus has been employed, and for this purpose cotton wool is often used. In the Russo-Japanese war sterilised cotton wool was distributed not only to the gunners but to the entire crew. Yet both after the battle of the Yellow Sea and after that of the Japan Sea several cases of deafness were brought to the surgeons. These cases might sometimes have been due to careless plugging, but there were some cases in which the ears had been very carefully plugged and yet deafness ensued.

An ear paste has been prepared for use in our navy, and "is issued when demanded," but as its use interferes seriously with hearing, it is not much in demand amongst the men.

The requirements to which an efficient aural plug should conform, according to Dr. Horne, are these:—It must be close fitting and impervious, and whilst reducing intensity of sound must not prevent hearing; easy to insert and easy to remove intact, no part remaining in the meatus; it must be non-irritating; inexpensive, so that the same plug need not be used repeatedly; and, above all, it must be as nearly aseptic as possible.—WALKER DOWNIE.

Lateral Sinus Disease: Some Considerations which determine the Extent of an Operation in Septic Invasion of the Lateral Sinus. By Hugh E. Jones, Liverpool (*American Journal of Surgery*, &c., December, 1914).—This paper was read before the Congress of Surgeons of North America, in London in July last. In it the author not only draws on his own experience, but on the replies he received from twenty-five British otologists to whom he sent a set of questions bearing on the subject. An analysis of these replies is added to the paper. The result is a very full and very clear exposition of present-day views.

The author divides his communication into two parts. First he considers the facts which influence the extent of the operation before the operation is begun, and then he discusses the completion of the diagnosis and the effect on operation procedure of conditions found during operation. The advisability of this division will appeal to all who have had to deal with lateral sinus disease.

He refers to the possibility of metastatic abscess and of temporal bone pyæmia propagated by other channels than by the lateral sinus. These cases are rare. Commonly, pyæmia, secondary to aural suppuration, arises by way of the lateral sinus, and the sinus itself is invaded—in the majority of cases—by direct extension from caries of the wall of the sulcus lateralis, resulting in a perisinous abscess, with granulations on the external sinus wall. But, as all otologists know, a perisinous abscess does not necessarily lead to a sinus thrombosis, nor does it follow that because there has been a rigor that the disease has already passed to the lumen of the venous channel. Herein lies the value of an inspection of the wall of the sinus, bone being freely removed in both directions for this purpose.

Mr. Jones studies the progress of the clot when once thrombosis has occurred, pointing out the positions at which its natural growth may be arrested, and he refers particularly, and we think very wisely, to the possibility of the extension taking place in a backward direction, as also to the possibility of the infection

passing into the sinus and finding a resting place in the sinus of the opposite side or in some other of the intracranial venous channels, a possibility which a consideration of the rate and character of the intracranial venous flow will make apparent.

To tie or not to tie the jugular in lateral sinus disease has always been a question warmly debated. The author discusses this most ably, and even shows how sometimes it may be advantageous to expose the vein for purposes of inspection, and to complete the diagnosis and not necessarily to tie it. Sometimes it is wiser to leave the vein alone; sometimes simple ligature is sufficient, and the diagnosis may be so clear before any operative procedure is carried out on the mastoid that ligation of the jugular may be the first step. It may be necessary to divide the vein and bring the upper end out into the wound in the neck and wash through from the sinus side; or the vein may have to be removed in more or less of its extent. The indications for these various procedures and the precautions to be adopted are most clearly set forth.

We should strongly advise all those who may be called upon to deal with this complication of ear disease to study the complete communication.—W. S. SYME.

The Attic or Epitympanum: Its Importance and Relation to Tympanic Suppuration. By Adair Dighton, F.R.C.S. Edin. (*The Liverpool Medico-Chirurgical Journal*, July, 1914).—Dr. Dighton prefaces his remarks by a definition of the epitympanum as that portion of the tympanum which contains the heads of the malleus and incus bones, and through which all secretions from the mastoid antrum pass on their way to the Eustachian tube or external canal. The heads of the two ossicles are so situated in the attic that, with their ligaments, they divide it into two compartments, an outer and an inner. The outer attic cavity is smaller than the inner one. The inner one communicates freely with the tympanic cavity proper, while the outer one is closed by Shrapnell's membrane.

If during an inflammation of the middle ear the lining mucosa of the tympanum and attic becomes swollen, then one or both of the passages leading from the attic may be closed. Pus formed in the attic under those conditions could not escape, and an acute mastoiditis would result. If the obstruction is less complete, the more fluid part of the secretion may escape, and the more solid portion be retained, and this retained "filtrate" may, the author thinks, form the starting point of a cholesteatoma.—WALKER DOWNIE.

Books, Pamphlets, &c., Received.

The Book of Pharmacopœias and Unofficial Formularies, by E. W. Lucas, F.I.C., F.C.S., and H. B. Stevens, F.I.C., F.C.S. London: J. & A. Churchill. (7s. 6d. net.)

A Manual of Chemistry, Theoretical and Practical, Inorganic and Organic, adapted to the requirements of students of medicine, by Arthur P. Luff, M.D., B.Sc.Lond., F.R.C.P., F.I.C., and Hugh C. H. Candy, B.A., B.Sc. Lond., F.I.C. With 62 illustrations; fifth edition, enlarged. London: Cassell & Co., Limited. 1915. (8s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDED 23RD JANUARY, 1915.

	WEEK ENDING				
	Dec. 26.	Jan. 2.	Jan. 9.	Jan. 16.	Jan. 23.
Mean temperature, . . .	33·1°	38·0°	40·3°	41·5°	41·9°
Mean range of temperature between highest and lowest,	7·6°	6·2°	5·3°	7·6°	7·5°
Number of days on which rain fell,	3	2	4	6	1
Amount of rainfall, . ins.	0·94	0·18	0·44	1·06	0·11
Deaths (corrected), . . .	398	479	543	501	460
Death-rates,	19·8	23·9	26·3	24·2	22·2
Zymotic death-rates, . .	1·8	2·0	2·7	2·1	2·4
Pulmonary death-rates, .	6·5	7·5	9·3	8·4	6·8
DEATHS—					
Under 1 year,	92	94	101	87	92
60 years and upwards, .	110	146	145	168	132
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles, . . . . .	...	1	...	1	1
Scarlet fever,	8	6	9	6	8
Diphtheria,	5	3	7	1	4
Whooping-cough, . . .	21	27	38	30	37
Enteric fever,	1	2	2	3	1
Cerebro-spinal fever, . .	...	...	1	...	2
Diarrhoea (under 2 years of age),	8	3	5	4	3
Bronchitis, pneumonia, and pleurisy,	112	125	169	151	122
CASES REPORTED—					
Small-pox, . . . . .	...	...	...	...	...
Cerebro-spinal meningitis, .	...	1	2	1	3
Diphtheria and membranous croup,	24	18	43	28	28
Erysipelas,	41	29	41	27	42
Scarlet fever,	108	99	117	131	137
Typhus fever, . . . . .	...	...	...	...	...
Enteric fever,	13	6	17	13	4
Phthisis,	41	34	25	64	47
Puerperal fever,	2	3	5	7	1
Measles,*	8	6	11	21	46

* Measles not notifiable.

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ORIGINAL ARTICLES.

HEAD INJURIES.*

By ALEXANDER J. WILSON, F.R.C.S.E., D.P.H. EDIN.

MR. PRESIDENT AND GENTLEMEN,—The subject I have chosen is a large one, and I can only hope to touch the fringe of it to-night. I have chosen this subject because it is one in which we are all interested, and because it has been my lot to have to deal with a fair number of head injuries. Personally I have learned much from the cases I refer to, especially from a series of cases of depressed fractures of the skull, which some of you no doubt remember; and the ease with which one may fall into errors in the diagnosis of head injuries was brought home to me so forcibly that I propose to-night, if you will bear with me, to read short notes of those cases, and then discuss head injuries in general, with special reference to diagnosis.

CASE I.—The first case I want to relate is that of a boy, 13 years of age, who fell into a soaking pit in Calderbank Steelwork on 3rd January, 1906. When lifted out the boy was a little dazed, and it was noticed that he had a scalp wound. I

* Read before a meeting of the Monklands Medical Society, on 24th November, 1914.

was called to see him, but on arrival about half an hour later he was apparently quite all right, and I found the wound had been dressed by the night watchman, who apologised for troubling me.

I set off home again, and left instructions for the boy to be brought up at once to my consulting room, a distance of about 500 yards, and soon afterwards two workmen arrived carrying the patient, and I was then informed that he insisted on walking to begin with, but after walking 300 yards up a fairly steep hill he admitted that his legs were becoming feeble, and allowed the workmen to carry him.

On examination, a compound depressed fracture of the vault of the skull over the right parietal eminence was discovered, but the characteristic symptoms did not appear till later. He was removed to the Alexander Hospital, and shortly after admission Dr. Murray administered chloroform, and I was allowed to operate by the surgeon on duty, viz., Dr. M'Phail, whose assistance, I need hardly say, was invaluable.

The wound was enlarged, revealing a depressed disc of bone about the size of a two-shilling piece, the line of fracture being incomplete for about one-third of an inch at the lowest circumference. A trephine opening was made at that part, the centre being just outside the line, and the depressed fragment removed. The inner table was broken into several loose fragments. There was a good deal of blood-clot on the dura mater, but no wound, and the brain pulsated.

After snipping off the sharp points, the two large pieces of bone were replaced, the wound partially closed, a drainage-tube put in, and a voluminous dressing applied.

There was a good deal of oozing from the wound the first night, but recovery was rapid and complete, and the skull is now quite sound; indeed, there is little, if any, evidence of a fracture having taken place.

CASE II.—On 30th May, 1905, I was summoned to Calderbank Steelwork to attend a man, about 50 years of age, who had just been struck on the head with a piece of scrap iron about 4 lb. in weight. I found him sitting on the mill floor quite sensible, and apparently not much the worse, and he informed me that the wound he had received was of no consequence, and certainly

would not require stitching. In his opinion a piece of sticking plaster was all that was necessary. On examination, however, a compound depressed fracture of the right parietal bone was easily made out, but I was again struck with the total absence of symptoms, and it was some hours later, after he was admitted to the Alexander Hospital, that commencing paralysis of the left arm and leg was observed.

Dr. Rennie was on duty at the Hospital, and helped me with this case.

The depressed piece of bone was just behind and slightly above the parietal eminence. It was about 2 inches long and 1 inch broad. The bone was badly splintered, and so dirty that it was considered dangerous to replace the fragments. The dura mater was lacerated, and there was pretty free hæmorrhage, especially from the vicinity of the superior longitudinal sinus. The wound was partially closed and a drainage-tube inserted, and the patient made an uninterrupted recovery, and was discharged well on 24th June.

CASE III.—My third case was a man, 30 years of age, who was struck on the forehead with an iron bar in the Calderbank Steelwork on 7th November, 1905. I found on examination a compound depressed fracture over the left frontal bone, the anterior and posterior walls of the frontal sinus being smashed into fragments and the dura mater exposed. Dr. M'Kay gave the anæsthetic, and assisted me on this occasion.

The broken fragments were removed and the wound partially closed, some strands of iodoform gauze being left in as a drain. The fragments were not replaced because they were not clean, and there was a good deal of bruising of the soft parts. The dressing had to be changed frequently at first, because there was a good deal of oozing, but the parts healed rapidly, and he was discharged well on 29th November.

CASE IV.—On 20th January, 1906, I was called to see a young man at Calderbank Station who had met with a railway accident. He was suffering from a depressed fracture of the skull, several scalp wounds, and his left hand was badly crushed. I found him in a dimly lit waiting-room, and as he was very drunk and struggled violently at any attempt to

examine his wounds, I simply bandaged them up and sent him in the ambulance to the Alexander Hospital.

The next morning, with Dr. Rennie's help, I amputated the left arm in its lower third, as the hand was hopelessly mangled, and trephined the skull, elevating a depressed fracture behind the left parietal eminence, and replaced the fragments.

There was pretty free hæmorrhage, and the patient was pulseless during the latter part of the operation, and, on this account, ether had to be substituted for C.E. mixture. Unfortunately, the patient never rallied, but gradually sank and died about twenty-five hours after operation.

The remarkable thing about this case was the fact that the patient remained perfectly conscious, and, as the hospital journal records, there was an entire absence of cerebral symptoms previous to the operation, and nothing to lead one to suspect a depressed fracture of the skull.

I would like to take this opportunity of expressing my indebtedness to the whole staff of the Alexander Hospital (1) for permission to operate on those cases; (2) for the great assistance given, and also for the careful nursing and after-treatment; and, lastly, for liberty to use the notes from the hospital journal.

In any branch of medicine or surgery it is of the first importance to make a correct diagnosis, and the results of treatment depend to a large extent on the diagnosis made. It seems to me that, as general practitioners, we should make the question of diagnosis our special study, and lose no opportunity of training our special senses.

An Indian hunter sees a footprint in his path, a curl of smoke on the horizon, or he hears a sound which others cannot detect. Wild animals are keen observers; nothing escapes their notice. Our special senses, unless we train them carefully, are poor and rudimentary in comparison with theirs. Yet our sight, our hearing, and our sense of touch may be developed to a high degree of perfection by cultivation.

The following story is an old one, but it conveys a lesson:—While an old doctor in a country town was seeing his patients, a woman of 35 years, who was a complete stranger to him, entered his room and handed him a bottle of urine. After he

had inspected the bottle carefully, the following dialogue, history informs us, took place: "This is your husband's?" "Yes." "He is older than you are—he is over 60?" "Yes; he is 64." "He is a tailor?" "Yes." "You come from ——?" (naming a village 3 or 4 miles off). "Yes." Now, how did he arrive at all these facts? He was a shrewd man, and one who had long cultivated the faculty of close observation. He saw that the woman was married, for she wore a wedding ring. Her husband was living, for she was not in widow's weeds. The specimen did not refer to her own case, for she was evidently strong and well. Probably the urine was her husband's. Floating in the bottle he saw a grey hair. This suggested that her husband was old. He saw some selvage of cloth rolled round the cork to make it fit the bottle. This selvage would be mere waste in a tailor's shop, but rare elsewhere. This indicated that the man was probably a tailor by trade. He noticed that she had some light-coloured loam on her boots, which was to be found in one place, and one place only, in the neighbourhood—the village he had named.

This was rather a clever performance for an old country doctor, and although "lightning diagnosis" would be very apt to prove a disastrous policy, especially in cases of head injury, we should learn from his example to lose no opportunity of training our powers of observation. Many mistakes are the direct outcome of defective observation, or of the deficient cultivation of the special senses.

The diagnosis of head injuries is full of pitfalls, and a very difficult subject, about which we are learning every day. It may well happen that we have to pay for our learning, not in coin of the realm, but in painful experience, before we become anything like proficient; but, as Materlinck remarks in discussing the search after truth, "we are so constituted that nothing takes us further or leads us higher than the leaps made by our errors. In point of fact, we owe the little we have learned to hypotheses that were always hazardous and often absurd."

As police surgeon I am constantly having it impressed upon me how important it is to "gang warily" with regard to head injuries.

Not very long ago I was called to the police office to see a

man who was lying on the floor in a condition of stupor. The police informed me that he had fallen and struck his head on the kerb, and they were of the opinion that the man was drunk. There could be no doubt about the man having had a large quantity of liquor, judging from the quantity he "unloaded," and the aggressive odour of alcohol, as the room was simply reeking with it.

On examination I found a scalp wound over the occipital region, 2 inches in length, which was sutured and dressed in the usual way. The pupils were contracted, but on forcibly rousing the patient they were seen to dilate, and after allowing the patient to settle for a time they were again observed to be contracted (the Macewen reaction). He was difficult to rouse, and I had some doubt in my mind as to the diagnosis. Under the circumstances I should have sent him home, because a police cell is not the place for an unconscious man, no matter what the cause may be, but, unfortunately, we had not got his address. He was not put into a cell, but was kept warm and comfortable beside the fire in the muster-room, and about 9 o'clock the following morning, when a relative called to enquire about him, he felt so well that he insisted on getting up and going home on foot, rejecting the offer of a cab. The sequel showed his mistake, because he collapsed about 200 yards from the police office and became unconscious, and had to be taken home on a stretcher, and was confined to bed for some weeks with symptoms suggestive of contusion of the brain.

This is only one of many instances one could relate to show how difficult it is to be sure of the diagnosis in these cases. It seems easy at first sight to say whether a man is drunk or not, but medical and legal text-books are equally shy about attempting a definition of drunkenness.

Perhaps you have heard the definition of the Irish barrister—

" Not drunk is he who from the floor
Can rise again and still drink more ;
But drunk is he who prostrate lies
Without the power to drink or rise."

This does not help us, any more than asking a man in a semi-comatose state to say, " truly rural," " British constitution," to write his name, or thread a needle.

One must never conclude that a man is drunk because he smells of liquor, nor because he is "without the power to drink or rise," as he may be suffering from concussion of the brain, compression of the brain due to hæmorrhage or a depressed fracture of the skull, poisoning other than alcohol, *e.g.*, opium, belladonna, uremic, or diabetic.

I think it is a good rule, when examining a supposed "drunk," after noting the conjunctival reflex and the reaction of the pupils to light, to apply the Macewen test already referred to. In addition to the Macewen reaction, it is remarkable how much may be learned from the pupils in cases of coma from various causes, *e.g.*, pin-point pupils in opium poisoning and in pontine hæmorrhage; equally dilated pupils in belladonna poisoning; unequally dilated pupils in compression of brain. It is well to remember, however, that some persons in health have unequal pupils congenitally or from early disease or accident.

Another test is to press the thumb firmly upwards against the supra-orbital notch. This is a valuable test, because if the patient is simply drunk or a malingerer he cannot refrain from wrinkling his forehead.

If there is a scalp wound I find *tr. iodi.* is often diagnostic as well as curative. The application of *tr. iodi.* to a raw wound will sometimes make the patient demonstrate his condition in a surprisingly convincing manner.

The characteristic symptoms of opium and belladonna poisoning should be borne in mind, and in doubtful cases the urine examined for albumen and sugar.

Diagnosis in a police office on Saturday night is generally easy, occasionally difficult, and sometimes it is quite impossible to give an accurate diagnosis. If the patient is deeply concussed, has unequal pupils, bloody serum oozing from the ear, a scalp wound and the history of a fall, you may, as the Americans say, "talk large;" but when the case presents only the symptoms of intoxication "a bit unusual," as the inspector will tell you, the matter is very different.

Dr. Graham Grant, a well-known London police surgeon, in describing his experiences, relates several most instructive cases where he was mistaken in his diagnosis.

Called to one of the stations about 9 P.M. to see "a drunk

a bit funny," he found a middle-aged man lying on the floor "unloading whisky," as a constable put it. His pupils were equally dilated; no blood from the ears, but some clots from the nostrils. At intervals he *drummed his heels on the floor*. He had walked to the station and abused the constable in the usual way; he also gave his name and address. While under examination he lapsed into insensibility, and was, therefore, placed on the ambulance. Immediately he was so placed he jumped off, and struck a constable in the face, dislodging his helmet. He then seized hold of some railings, and considerable force was required to remove his grasp. Roundly abusing everybody, he was put in the cell. As he had not come out of what was assumed to be a drunken sleep at 6 A.M., Dr. Grant was again called, and found the man's condition desperate. He died in the infirmary the same night, and the *post-mortem* showed extensive fracture of the base.

Some few nights later, and while still smarting under this reverse, Dr. Grant was called to see another case—a woman intoxicated, semi-comatose, and with considerable hæmorrhage from the left ear. Not to be caught this time, he immediately sent her home, and next morning drove round to see how she was. She had gone out to fetch some beer, and an examination on her return with a mirror and speculum, showed a polypus projecting through the tympanic membrane.

On another occasion Dr. Grant and a medical friend were examining four men, freely bespattered with blood, arrested on a charge of murder, when a woman was brought in. She had been pushed down by a young man, and had sustained a small scalp wound. She complained in no measured terms of the sight in the police station, as "blood always made her feel sick," and asked to be allowed to go home. Her wound was dressed, and, as she seemed all right, she was taken home by a policeman. A week later she died in the infirmary, no diagnosis having been arrived at, but a *post-mortem* showed a fractured base.

Injury of the brain and fracture of the skull are closely related, but there is no constant relation between the two in point of severity; for gross lesions of the brain may follow accidents in which the skull is not fractured, and extensive fractures of the skull are sometimes sustained without giving

rise to any cerebral symptoms at the time. The slighter evidences of gross lesions may escape notice unless carefully looked for : whilst mental and neurasthenic sequelæ are common. Again, severe cerebral symptoms may attend an injury which causes no gross lesion of the brain, as in "concussion," and every gradation exists between this condition and the most extensive lacerations of the brain substance.

A difficulty which frequently arises is that of distinguishing between cases in which the cerebral symptoms are due to the injury, and cases in which scalp wounds or even fractures of the skull have been sustained in consequence of a fall due to sudden loss of consciousness from some totally different cause. For example, the subject of a cerebral embolism may in falling sustain a fracture of the skull. The history of the case may help one, but sometimes it may be unreliable or incomplete, *e.g.*, "found insensible by the police;" or it may be intentionally misleading.

Under these circumstances a careful examination must be made to determine the presence or absence of disease capable of producing unconsciousness. In the absence of any such indication the presumption is that injury is responsible for the condition.

In examining a case of head injury we observe the presence or absence of scalp wounds, always bearing in mind that although the patient may seem perfectly well and sensible, and there is nothing to be seen but an apparently trivial wound of the scalp, he may in reality be suffering from a compound depressed fracture of the skull, or some other lesion equally serious. When the wound has been cleansed, and also the surgeon's fingers, it should be explored for signs of fracture. A scalp wound, of course, may be of the contused variety, and if not seen till some time has elapsed, a hæmatoma will probably be felt.

You are all familiar with the cephal-hæmatoma met with in infants after birth, and the very striking resemblance to depressed fracture of the skull sometimes observed.

The escape of blood from the ears accompanied by cerebro-spinal fluid would, of course, indicate fracture of the base of the skull, but a polypus or ruptured tympanic membrane might account for the bleeding, so that bleeding from the

ears alone would not warrant such a diagnosis, nor bleeding from the nose. As a matter of fact, bleeding from the ears occurs in a very small percentage of cases of fractured base, and it is always well to remember that the blood may have trickled into the ear from a scalp wound on the vault, especially if some one has been washing the wound before your arrival.

In fractures of the anterior fossa one should look for bleeding and cerebro-spinal fluid from the nose and mouth, hæmorrhage beneath the lower part of the conjunctiva and into the eyelids, and retinal hæmorrhage. In the middle fossa one would expect hæmorrhage into the temporal region, and blood as well as cerebro-spinal fluid from the nose, mouth, and ear. In the posterior fossa hæmorrhage would appear in the occipital region and behind the ear, and there would be no escape of cerebro-spinal fluid.

A case is recorded by Mr. Lockwood of a fracture of the middle fossa in a boy where a teaspoonful of brain substance was collected from the ear, and the boy made a good recovery, and, on examination a year after the accident he was "an exceedingly bright and intellectual boy."

The duration and degree of any loss of consciousness are important, but one should always remember that very serious injuries to the skull and brain are sometimes attended by no loss of consciousness whatever. The cranial nerves are sometimes involved, and the symptoms may be delayed; this is especially the case with facial paralysis due to implication of the seventh nerve in the temporal bone.

About eighteen months ago I had an example of this in the case of a boy who fell off a bread van, and struck his head on the pavement. Several days after the accident, when he had apparently recovered from what looked like a severe concussion of the brain, facial paralysis developed. He had no other symptoms whatever, and I am glad to be able to relate that he made a complete recovery.

Concussion of the brain is a very common accident. It has been defined as *acute cerebral anæmia* due to *sudden* vaso-motor depression.

In concussion the loss of consciousness, which is the outstanding feature of this condition, is sudden; often of only brief duration. It is rarely so profound but that strong

sensory stimuli will elicit some sort of a response. The term concussion is sometimes a great comfort, like that blessed word, "Mesopotamia," and I am afraid it often affords a very welcome *asylum ignorantie* to the general practitioner, who is expected to label his patient and is often afraid to Asquithise him and acknowledge to the relatives the impossibility in many instances of making an immediate diagnosis and prognosis.

I have learned from experience in all cases of head injury to give a guarded diagnosis and prognosis, and, although the symptoms suggest a simple concussion, to advise the friends to "wait and see" if no further developments take place, because in many cases it is quite impossible at the first visit to exclude fracture of the base, contusion of the brain, and meningeal hæmorrhage. The course of a case of concussion varies. The functions of the brain may return to the normal within a few minutes, or at most within a few hours. If the circulatory disturbance has been very severe, death may ensue, or indications of gradually increasing brain pressure, or of brain contusion, may supervene on the clinical picture of concussion.

The symptoms of concussion vary, and the text-books seem to contradict each other with regard to them. There is hardly any single so-called "general symptom" which has been omitted from the descriptions of concussion. These include retardation and acceleration of the pulse and respiration, headache, vomiting, loss of consciousness deepening to coma, excitement, pallor, &c.

Order can best be introduced into this chaos by adopting Kocher's view that concussion is, in a limited sense, an expression of a sudden rise in cerebral pressure. The pressure curve in concussion would resemble a section from the curve of a slowly rising cerebral pressure, read backwards, descending from the severe to the slight symptoms. It depends, therefore, entirely on the stage in which we find the patient, whether there be signs of paralysis or of irritability, of pulse retardation or acceleration. The symptoms also vary from case to case, in accordance with the severity with which different parts of the brain are affected.

If the medulla suffers most the pulse and respiration symptoms will predominate. Disturbance of consciousness will be most in evidence if the main stress has fallen on the cortex.

Vomiting is a common symptom in concussion of the brain, and it usually appears as the patient is regaining consciousness; but before we ascribe individual symptoms, especially vomiting, to a cerebral origin we must make sure that there is no other injury present, *e.g.*, an abdominal injury.

Quervain quotes the case of a young man with a fractured skull, who began to vomit on the second day, and this was naturally regarded as a cerebral symptom. Examination, however, showed that there was effusion in the abdomen, and laparotomy revealed a rupture in the hilus of the spleen. It must be remembered that cerebral symptoms, such as vomiting and stupor, may supervene after any severe injury, especially fractured limbs. These symptoms are due to fat emboli, and are associated with abundant fat in the urine, a rapid pulse, and blood in the sputum.

Contusion of the brain.—You are all familiar with the clinical picture presented in cases of bruising and minor degrees of laceration of the brain. The extreme restlessness and irritability, the curled-up position, and the non-parliamentary language all point to cerebral irritation. This gradually subsides or merges into the condition of cerebral compression.

There is an immediate onset of the symptoms in contusion of the brain just as in concussion, but the longer duration of the symptoms points to contusion. Another important symptom which helps one to make an accurate diagnosis is a rise of temperature, which persists and tends to increase as the symptoms progress, and which cannot be explained by infection from without.

In ordinary cases recovery is the rule, but there is a liability to incomplete recovery, leaving such residual conditions as headache, loss of memory, giddiness, changes of disposition, and traumatic neuroses.

In *compression* of the brain the loss of consciousness, unless attended by preliminary symptoms of concussion, is gradual, and as time goes on it becomes deeper and deeper until no sensory stimulus will elicit any response, and, if unrelieved, the coma deepens until death ensues. A patient may lose consciousness, then recover, and finally sink into a state of coma from the compression of an intracranial hæmorrhage.

It is useful to ascribe a special clinical picture to each variety of head injury, but in practice the differentiation is not very clear, and the different forms tend to coalesce. But individual features of each class can be recognised with more or less certainty, and separated from each other.

The following example, related by Quervain, makes this clear:—A young stoker who fell off his engine was picked up somewhat stunned; he remounted, and after the stupefaction passed off he became very excited. Vomiting, headache, and retardation of the pulse appeared in two hours, and after another couple of hours had passed he was completely unconscious. Examination showed that the left temporal bone was involved. On trephining, it was found that an extra-dural and an intra-dural hæmatoma existed under the fractured bone. A second trephining, the next day, revealed a right-sided intra-dural hæmorrhage. On the day after the injury the temperature rose to 104° F., and the pulse became very rapid, so that the prognosis was obviously bad. Death took place on the third day. This case permitted the formation of an accurate diagnosis step by step during life.

The stunning which came on immediately after the fall indicated *concussion*. The brief interval of freedom which preceded the severe symptoms of slowing of the pulse and unconsciousness pointed to an increasing *cerebral pressure* caused by the *hæmorrhage*, which was revealed at the operation. As the trephining, which was done immediately on the site of the injury, did not yield complete relief, it was obvious that there must be either another hæmatoma or a contusion of the brain, or both together. The slow pulse becoming so rapid pointed to the probability of an increase in cerebral pressure through a second hæmatoma, which was found when the so-called contrecoup area was trephined. The simultaneous rise of temperature led to the diagnosis of cerebral contusion, which was also verified at the *post-mortem*. There was no meningitis present, so that the pyrexia could not be attributed to this cause.

Compression of the brain may be due to a depressed fracture or hæmorrhage.

With regard to the diagnosis of fractures of the vault of the skull, one should make it a rule to explore every scalp wound

carefully, whether there are symptoms of compression present or not, because a very small scalp wound may be associated with a depressed fracture. It is also worth remembering that fractures of the vault rarely occur without a corresponding scalp wound. A hæmatoma of the scalp should also make one suspect fracture, and the case be kept under observation.

It may be possible in some cases to take an *x*-ray photograph, and in a doubtful case this would be a great help.

Pringle lays stress on the value of percussion as an aid to diagnosis. "The patient's head must be supported beneath the occiput and the skull struck sharply with the finger. When a fracture is present two changes in note may be elicited. Either a note lowered in pitch over the fractured zone, or, in addition, a definite cracked pot sound. The note elicited is most typical when comminution is present, and some fragments loose. A fracture of a T-, or L-, or V-shape gives the best cracked pot sound, and the crack quality is always most pronounced when the percussing finger comes over the angular portion of the bone. Hæmorrhage into the subaponeurotic region blurs the note."

A depressed fracture over the motor area of the brain will probably show signs of paralysis on the opposite side of the body a few hours after the accident has occurred, but it is most important, both for the credit of the surgeon and the welfare of the patient, that the diagnosis should be made before and not after those symptoms appear.

Compression is usually due to hæmorrhage from a torn blood-vessel either inside or outside the dura. According to Quervain, bleeding to the extent of nearly 2 oz. can be tolerated without any serious disturbance. It, therefore, follows that the signs of pressure will not appear at once, but only when the extravasation has reached a certain amount. *An interval* of varied length will intervene, and during the interval we may not recognise anything wrong with the patient. The interval may last from a quarter of an hour to several days—even a week or more. You are all familiar with the symptoms in a typical case, but the symptoms depend on the stage of compression, and, according to Kocher, there are four stages—

1. *The stage of compensation.*—A mild degree, insufficient

seriously to compromise the circulation. Cerebro-spinal fluid escapes into the spinal canal, and some of the venous radicles are compressed. Some venous engorgement, slight headache, possibly some focal symptoms, and mental dulness.

2. *The stage of beginning compression.*—Headache pronounced, vomiting, vertigo, restlessness, excitement, or delirium, and slowing of the pulse.

3. *Stage of fully-developed compression.*—Widespread capillary anæmia brought about by further increase of tension; medulla markedly affected. The period of vaso-motor regulation has set in with its high blood-pressure, and this, combined with its vagal qualities, gives to the pulse its so-called bounding character. The rise in arterial pressure may exhibit fluctuations in level, which can easily be recorded on a sphygmomanometer, even when they are not appreciable to the finger. These are accompanied by rhythmicities in respiration, which may acquire the typical Cheyne-Stokes type with periods of absolute apnœa, by rhythmic alterations also in the size of the pupils, by a wavering increase and lessening of the depth of stupor; so that with the “up wave” in pressure the patient may moan, become irritable and be difficult to control, and with the “down wave” be deeply comatose. The pulse is slowed, even to 40 or 50 beats per minute. Choking of the optic discs is pronounced, the reflexes abolished, cyanosis extreme, and breathing stertorous.

4. *The stage of paralysis.*—In this terminal stage, compensation on the part of the arterial tension shows signs of failure; there are irregular cardiac and respiratory efforts, the pulse becomes rapid, coma deepens, there is complete muscular relaxation, the pupils become widely dilated, and with the permanent fall in blood-pressure there is a cessation of cerebral function with respiratory paralysis.

Lumbar puncture is sometimes practised as an aid to diagnosis in brain injuries, and is sometimes of value. In concussion, of course, it is negative, but it is said to be a rather risky proceeding in cases of concussion.

In contusion of the brain some blood would be obtained, and also in compression of the brain due to hæmorrhage, if the bleeding were subdural.

The sequelæ of head injuries are often of a serious nature. I

can remember at least three men in the prime of life who ultimately became insane as the result of head injuries.

1. One of those men (R. Mc.) fell and struck his head on the kerb while intoxicated, but he recovered apparently, and resumed his work as a miner soon afterwards. It was noticed, however, that he was a little queer in his manner, and he gradually became insane, and was ultimately admitted to Hartwood Asylum. The insanity was supposed to be due to the fact that he had been a heavy drinker all his life, but he died in the asylum about a year after admission, and the *post-mortem* examination revealed a fracture of the skull extending from the foramen magnum to the vertex.

2. The second case was that of a man called (H.), a Calderbank miner, who, while working at the coal-face, sustained a compound depressed fracture of the temporal bone, due to a fall of coal. He was operated on by Mr. Pringle in the Glasgow Royal Infirmary, and I was informed that pieces of coal were actually found embedded in the brain tissue. A hernia cerebri followed, and after it subsided the gap was closed by a metal plate which was worn for several months; but this had to be removed, and the patient gradually became rather queer in his manner, but quite harmless, and for the last ten years or thereby, I understand, he has been an inmate of Old Monkland Poorhouse.

3. The third case was that of a butcher, whose horse bolted one day, with the result that he was thrown from the van and sustained a depressed fracture of the vault of the skull with laceration of the brain substance. He was operated on in the Glasgow Royal Infirmary, but soon afterwards became so maniacal that he had to be removed to Hartwood Asylum.

It is very difficult to arrive at any estimate of the number of cases of head injury showing remote effects, but those of you who are interested in the subject will find in Mr. Crisp English's *Hunterian Lectures* a tabulation and discussion on the after-history of 300 cases treated at St. George's Hospital—300 cases personally investigated at periods varying from one to twenty years subsequent to the time of the injury. English classified his cases into three series—each 100 in number—according to the severity of the lesion:—Series I—fracture cases; Series II—cases of concussion, contusion, and laceration; Series III—miscellaneous cases. The remote results as

observed in the first and second series were as follows:—
Series I—no effects, 31; slight effects, 50; marked effects, 19;
Series II—no effects, 48; slight effects, 42; marked effects, 10.
In the 200 cases, therefore, that come under Series I and II, 79 experienced no ill effects from the injury, 92 developed slight effects, and definite effects were present in 29 cases.

The more common sequelæ are traumatic neurasthenia, headache, epilepsy, insanity, and hernia cerebri.

Rawling, in discussing traumatic neurasthenia, says—"All those cases characterised by the indefinite nature of their complaint require the most careful sifting—to separate the wheat from the chaff—for there is always a certain proportion of malingerers, who realise the pecuniary advantages of their position. When these are excluded, a large class remains in whom the injury must undoubtedly be regarded as the *fons et origo mali*. A curious and interesting train of symptoms supervenes after the accident, indefinite from a localising point of view, but quite definite from the standpoint of the patient himself. Mental irritability, with a ready tendency to fly into a passion (Kaplan's explosive diathesis), may be regarded as an almost constant symptom. The patient is changed in his manner towards those near and dear to him, restless, irritable and intolerant of noises, morose, and incapable of managing his financial affairs."

The change may be insidious in origin, but in the absence of appropriate treatment, steadily progressive. The mental changes, unless checked in time, tend to merge into definite insanity, not infrequently of a homicidal or suicidal character.

Insomnia, terrifying dreams, loss of appetite, emaciation, headache, vertigo, nervousness, amnesia, lack of power of mental concentration, and mental depression are all noticeable features. All such symptoms are aggravated by indulgence in alcohol and exposure to the sun.

The diagnosis of the sequelæ of head injuries, however, must be left over in the meantime, and I can only hope that my somewhat rambling remarks on head injuries have proved interesting and suggestive, and that the discussion to follow will throw fresh light on the subject.

A CASE OF POLYGLANDULAR SYNDROME WITH
ADRENAL HYPERNEPHROMA AND ADENOMA OF
THE PITUITARY GLAND—BOTH OF SMALL SIZE.

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ALTHOUGH cases of polyglandular syndrome have been described clinically by Cushing⁴ and others, the rarity with which cases are encountered in which a lesion can be demonstrated after death in two of the ductless glands is such that the following case is worthy of being put on record.

In using the term polyglandular syndrome I have been influenced by the fact that such a term may be restricted to those cases of disordered activity of the ductless glands where a difficulty is met with in determining which of the structures is primarily at fault.

The case was that of a woman aged 28 years, and occurred in the practice of Dr. Thomas Forsyth, Glasgow, to whom I am indebted for the opportunity of recording it. For a period of over five years she suffered from the symptoms of an illness of indefinite and confusing character, and a development of secondary male sexual characters had taken place.

The chief features presented by the case were nervous in character. She suffered much from severe headaches and from pains in the chest and eyeballs, and was troubled with marked insomnia, muscular weakness of an extreme character, purpuric outbreaks, amenorrhœa, and hypertrichosis.

History of illness.—Her illness dates from the latter part of 1908. While a nurse in a general hospital she was incapacitated from work by severe pain in the chest at the level of the second rib. She was laid up for a month and was off duty for six months, at the end of which time she was able to resume work. She was treated for gastritis. Shortly after this she developed a pain in the left ovarian region, and had finally to give up nursing after a service of three and a half years. At the beginning of 1910 she was so ill that she had to enter a

nursing home, where she remained for some time under observation, and at this time was examined under a general anæsthetic, and adhesions matting the bowel were said to have been made out. Menstruation had been irregular since the commencement of her illness, and for the last three and a half years she suffered from complete amenorrhœa. Her complexion changed from pale to red. Her body became stouter, and she developed a growth of hair on the face and body. She suffered from extreme headaches which made reading impossible. Her eyes became prominent and red, and she experienced pains at the back of the eyeballs. Her memory became much impaired. She was troubled with insomnia, and her sleep was disturbed by horrid dreams. She had no recollection of ever having received a fright or of suffering from shock in any way. Her previous health had always been good, but as a child she suffered from measles and scarlet fever. The family history was also good.

Condition on examination in October, 1913, when admitted to Victoria Infirmary.—The patient appeared to be quite rational in speech, but was extremely self-conscious. She was stout and appeared much older than her stated age. Her eyes were prominent. There was well marked exophthalmos, and the conjunctivæ were inflamed. Her complexion was florid. There was a growth of hair upon the face in front of the ears and on the upper lip and chin. Pulsation was present in the neck. Her body was well nourished and subcutaneous fat was evident all over the trunk, but the limbs were thin and wasted. The skin was harsh and dry, and there were petechial hæmorrhages on the arms and ecchymosis on the legs. An erythematous rash was present on the back and the skin was desquamating. The pupils reacted to light and accommodation. The knee reflexes were very erratic, the plantar reflexes normal in direction but exaggerated, and the tendo Achillis reflex was absent. The skin reflexes were active. The fundus oculi showed hyperæmia of the disc, but nothing further could be made out.

The right border of the heart was at the middle line, the upper border at the level of the third interspace, and the left border was $4\frac{1}{2}$ inches from the middle line. The apex beat was present in the fifth interspace, 4 inches from the middle line.

The heart sounds were pure and free from murmur. The rhythm was regular. The pulse was somewhat rapid, well sustained, regular and of good tension.

Percussion of the lungs showed no impairment of the note. V.F. and V.R. were normal in quality and equal on the two sides. The R.M. was vesicular and free from adventitious sounds. Palpation of the abdomen showed the presence of fine shotty nodules, which were tender to the touch. A lesser number was also noted on the chest. Vague and indefinite pains were experienced on deep palpation of the abdomen, as also tenderness along the sternum, and at the level of the second ribs. There was tenderness over the costal margin of the seventh and eighth ribs. The hepatic dulness, in its transverse diameter, measured $3\frac{1}{2}$ inches in the nipple line. The urine had a specific gravity of 1015, was faintly acid and contained a slight trace of albumen. The blood-pressure was 185 mm. The blood picture showed a red blood count of 4,480,000 per cub. mm. The leucocytes were 8,400 per cub. mm.

During the three months of her residence in hospital her condition varied but slightly. The headaches were constantly a troublesome feature, and the congestion of the conjunctiva came and went. The slightest knock, and even touching, provoked cutaneous hæmorrhages, so that she was never free from ecchymosis. Spontaneous petechial hæmorrhages occurred at frequent intervals, and on one occasion blood clots were passed by the bowel. X-ray photographs at different periods gave negative results. The treatment was confined to rest, dieting, an alkaline stomach mixture, and calcium lactate as occasion required. Her symptoms were relieved by injections of pituitrin and adrenalin, and the headaches, when severe, by antipyrin and citrate of caffeine.

She left hospital in the middle of January, 1914, but was confined to bed at home. The headaches continued, but were no worse. Cutaneous hæmorrhages were still a prominent feature, and on one or two occasions there was a repetition of the hæmorrhage from the bowel. She became more restless and mentally disturbed, and death took place two months later by a gradual asthenia.

Autopsy (13th March, 1914).—The body presented the

appearance of a woman of middle term of life, and looking much older than her age. It was well developed and well nourished, but the limbs were thin and somewhat wasted. Rigor mortis was present. The pupils were equal and medium. The eyes were unduly prominent, and presented the appearance of well-marked exophthalmos. There was an excessive development of hair on the face, specially marked on both sides in front of the ears, and forming on the upper lip a distinct



FIG. 1.

Tumour of pituitary—*a*, tumour; *b*, pars intermedia.

moustache. The hair of the head was short, thin, dry, and bristling. Numerous petechial hæmorrhages were present on the trunk and limbs. On the antero-lateral aspect of the thighs especially the appearances presented resembled those of large areas of bruising, while on the front of the legs a pigmented and eczematous condition was noted. Several port-wine coloured stains were noted at each knee, of an average size of 1 inch diameter. The subcutaneous fat in the thoracic and abdominal walls showed evidence of slight œdema, and was

remarkably pale in colour. There was a general increase in the amount of fat in the body wall and of that of the omentum and mesentery. The ribs were brittle and easily fractured.

A few fibrinous strands were present on the surface of the heart and a few areas of hæmorrhagic character, but there was no excess of fluid in the pericardium.

The heart was slightly larger in size than normal, and the left ventricle showed a marked degree of hypertrophy of its wall, due to increased peripheral tension. There was no valvular lesion, and no apparent change in the heart muscle. The aorta showed the presence of a number of small atheromatous patches, and the vessels in the region of the mesenteric and renal arteries showed an arterio-sclerotic thickening.

The lungs were free. The apices and upper lobes were pale in appearance, and œdematous, while both bases were in a condition of passive congestion, and at the left base two infarctions were noted—the larger of recent and hæmorrhagic appearance, and the smaller somewhat older and pale in colour.

The larynx and windpipe were normal. The thyroid glands were slightly enlarged and congested. The vesicles were somewhat swollen in character, but there was no evidence of cystic change of an appreciable degree. The thymus was ill-defined, fatty, and atrophied. The stomach was small in size, and its mucous coat presented a congested and rugose appearance, the result of a chronic gastritis, but there was no evidence of ulceration. The intestines, apart from congestion, were normal. Lane's bands were present at the cæcum and splenic flexure. The liver was normal in size, and although slightly congested, presented no other change. The spleen was of normal size, and it presented the appearance of a slight degree of passive congestion. The kidneys were embedded in a mass of fat. The right was of normal size, but the left was slightly enlarged. The capsules were stripped with little difficulty. The surfaces were granular, with fatty and hæmorrhagic mottlings. On section they showed the appearances of a chronic interstitial nephritis, with parenchymatous changes; the proportion of the cortex to the medulla was disturbed, and the outline distorted. The vessels of the kidneys showed arterio-sclerotic thickening. Both suprarenals were slightly enlarged, and the medullary

portions were swollen and cloudy. In the left suprarenal a small tumour, of the size of a green pea, was present in the medulla of the gland, resembling closely in appearance the naked-eye character of the cortex. The hæmolymph glands showed slight enlargement. There was no enlargement of the mesenteric glands, but in one which was sectioned an active focus of tubercle, with typical giant cells, was recognised. The pancreas appeared normal. The uterus was small in size,

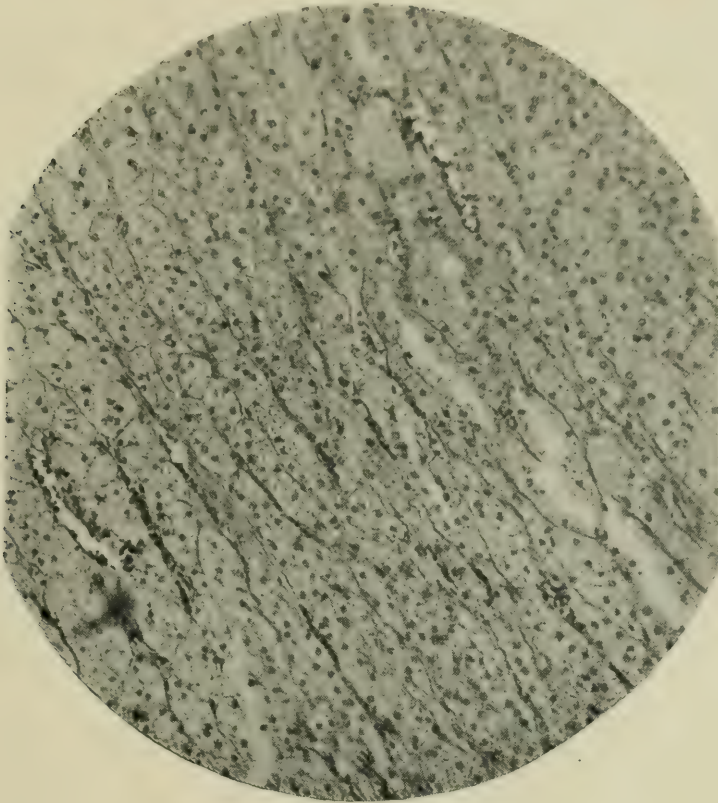


FIG. 2.

Low power illustration. Tumour of suprarenal.

having the appearance of the organ as met with in the post-climacteric stage. The ovaries were small in size, fibrous in appearance, and senile in character.

The calvarium was thickened, and the markings of the vessels on its inner aspect unduly prominent. The dura mater was congested, and a number of hæmorrhagic areas were noted on its inner surface. The brain was in a state of œdema. At the inferior frontal region on each side small hæmorrhagic foci were noted, and similar minute hæmorrhages were seen in other parts of

the organ. There was no distension of the ventricles. The pituitary body was about normal in size; the sella turcica was slightly excavated, and on removal of the gland the sphenoidal and ethmoidal sinuses were found to be dilated. The gland appeared somewhat congested, and a section through it showed the presence of a small growth in the anterior lobe of millet-seed size.

Summary of post-mortem.—Chronic Bright's disease, with œdema of brain and presence of tumour nodules in suprarenal and pituitary glands; senile character of uterus and ovaries; arterio-sclerosis.

Microscopical investigation of the case: Pituitary.—For the purpose of obtaining specimens through the tumour nodule, which at the same time would give a complete picture of the anterior lobe and show the appearance of the posterior lobe, the gland was cut from above downwards and examined in serial sections. The tumour nodule was situated deeply in the anterior part, close to its junction with the pars intermedia, and sections at the level of the centre of the growth showed that it had encroached on this region to the extent of one-fifth of its size. The structure of the pars anterior itself showed the usual arrangement into columns of cells separated from each other by the sinusoidal blood-vessels and connective tissue stroma. The vessels were engorged with blood, and appeared in places to be much dilated. The stroma cells were not increased, and for the most part were normal in appearance. Both chromophobe and basophil cells were recognised in the peripheral part of the gland. The basophil cells were here present in greatest numbers. Towards the centre of the gland cells with eosinophil granulations were noted, but these were few in number. The greater part of the section was composed of cells of a chromophobe character, closely packed together and filling the glandular spaces. It was quite evident that they had increased at the expense of the eosinophils. A number of them were globular, swollen, and of large size, with eccentric and deeply staining nuclei, and a few multinuclear cells were also observed.

The tumour was of the nature of an adenoma, and was divided into alveolar groups by the vascular septa entering from the normal structure. Although quite distinct in outline,

and separable from the true glandular structure, it could not be said to possess a definite capsule. It was composed of cells of columnar epithelium, arranged in acinous groups. The cells resembled closely those of the pars intermedia, but were more cylindrical in character and somewhat larger in size. The protoplasm was finely granular and neutrophilic, and the nuclei were oval in shape and situated at the base of the cells. The vessels were similar in character to those of the anterior part of

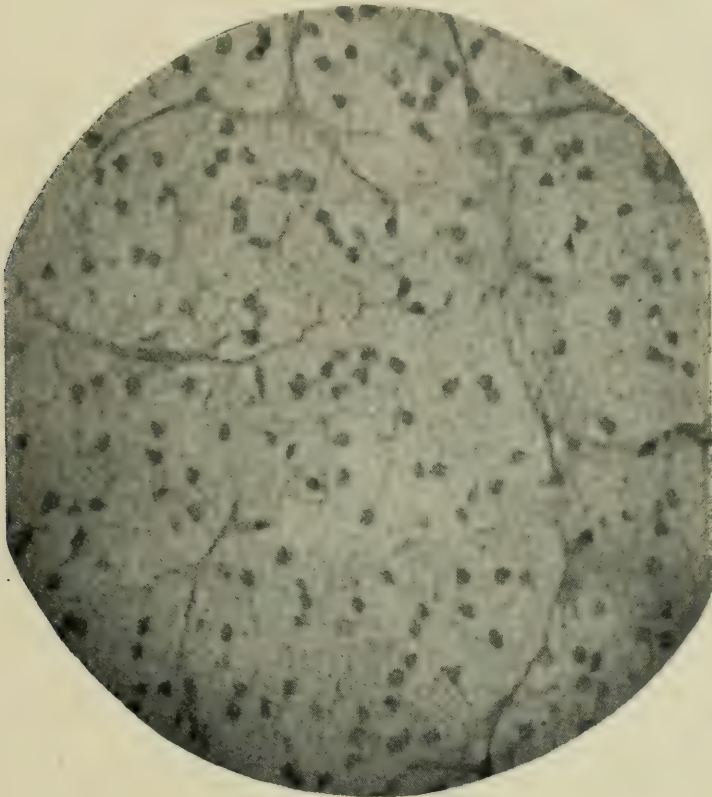


FIG. 3.

High power illustration. Tumour of suprarenal.

the gland, and a few areas of hæmorrhage were present between some of the layers of the cells. Colloid substance was present in small quantities in the tumour zone. The pars intermedia showed the presence of groups of cells and of a number of cysts of variable size, some of which must be regarded as abnormally large. The pars nervosa presented no abnormal features, and was of normal size.

Right suprarenal.—The cortex of the gland showed evidence of slight hyperplasia, and congestion was a marked feature of

the section. The medullary portion was rather small in size, but the chromophile cells were quite abundant. A few areas of round-celled infiltration were seen, and a slight excess of fibrous tissue was present at the position of the central vein which emerges from the medulla.

The left suprarenal was enlarged by the presence of the tumour nodule above described. The cortical substance towards the central area of the gland was distorted, and the tumour zone occupied the position of medullary substance, which was correspondingly reduced in amount. The appearances met with resembled closely those seen in the right suprarenal. The tumour was limited at the greater part of its circumference by an increase in the amount of the stroma, while on one surface it gradually merged into the true glandular tissue.

With a low magnification the tumour was seen to resemble the structure of the zona fasciculata. It was divided into short columns and more or less circular groups of cells by the capillary channels, which, with the fine connective tissue stroma, formed the framework of the growth. The cells varied but slightly in size, and were somewhat polygonal in shape, with finely granular and lipid character of the protoplasm and nuclei of a round or oval shape.

Thyroid.—The sections of this organ showed that considerable change had taken place throughout the entire gland. The appearances resembled much those seen in cases after castration, and would be regarded by Okintschitz⁸ as an expression of a retention hypertrophy rather than as a hyperfunctioning of the gland. Glandular proliferation was present with a heaping up of the cells at the junction of vesicles, and some flattening of the epithelium lining the tubules was noted. The tubules were slightly dilated, and contained an excess of colloid, but there was no breaking down of the septa to form cyst-like cavities. The parathyroid glands presented normal appearances.

Uterus.—The appearances presented were those met with in old age. The mucous membrane was much reduced in size, and the glands few in number and atrophied in appearance, while the stroma was more fibrous in character and of denser appearance. The muscular substance was also reduced in amount and distinctly fibrous, and the blood-vessels with thickened walls were unduly prominent. The changes in

the ovaries were also of a senile character. The stroma was increased in amount and fibrous in appearance, and the follicles had almost entirely disappeared. Only one or two ripening follicles could be determined, while several corpora fibrosa were seen. The vessels were closely approximated by the fibrosis and had thickened walls.

Kidneys.—The appearances presented were those of a chronic nephritis of the arterio-sclerotic type. The chief

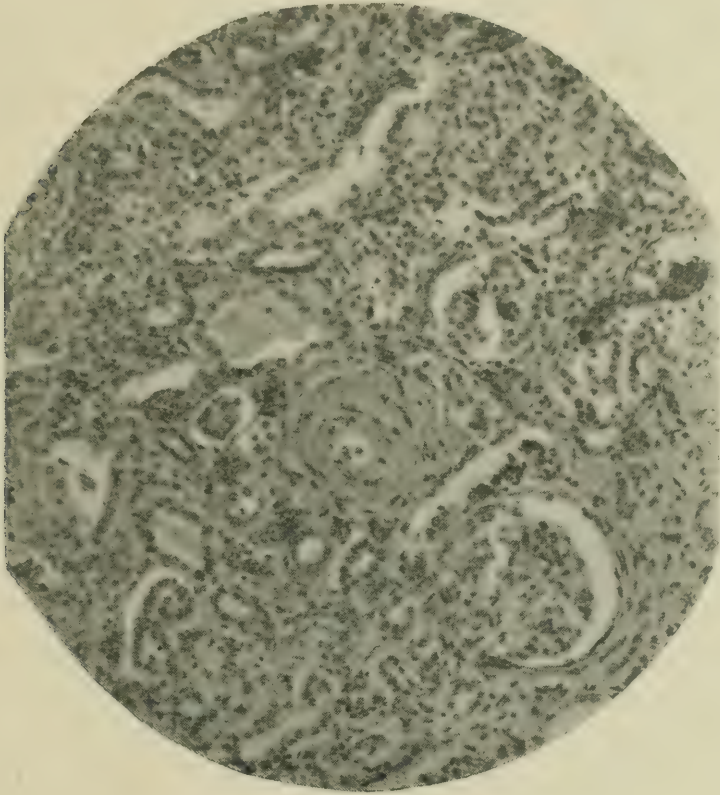


FIG. 4.

Section of kidney showing fibrosis, tubular and vascular changes.

feature of the section was the advanced degree of fibrosis, which was specially noted in the region of the straight tubules. Young connective tissue was still present in places, but only a few areas of cellular inflammation could be recognised in different parts of the organ. Dilatation of a number of the convoluted tubules had taken place, and degenerative changes with desquamation of the epithelium were present. In some of the tubules hyaline casts were seen, and at one or two places uratic deposits were also noted. The glomeruli

had undergone considerable alteration. While most of them presented normal appearances, a number were atrophied, with marked thickening of Bowman's capsule, and others showed a distinct sclerosis and fibrous appearance. The intertubular vessels were congested and some of them dilated. The arterioles and medium sized vessels showed distinct thickening of their walls, and in parts of the section the condition had advanced to an actual endarteritis obliterans. The changes in the aorta, mesenteric, and renal arteries were of an early atheromatous type.

Liver.—The organ was in a state of congestion. The liver cells were slightly swollen and granular, but the nuclei were well stained, and in the portal zones a trifling increase in the amount of the fibrous tissue was seen.

Spleen.—The appearances of the sections were those of a chronic passive hyperæmia, with resulting hyperplasia of the trabeculæ and fibrous stroma. Fibrous tissue increase was also present around the vessels with, in addition, distinct thickening of their walls.

Thymus.—Remnants of the gland were only seen on microscopical examination. The greater portion of the sections was of the nature of fatty tissue, with a few nerve bundles outside the gland. The surviving glandular tissue was fibrous in character, with the corpuscula of Hassall of small size and approximated to each other. The appearances were those of a thymus which had undergone its retrograde changes.

Nervous system.—The appearances met with in brain and spinal cord were chiefly those of œdema, and the nerve cells showed the presence of changes which might be regarded as evidence of *post-mortem* alteration. The capillaries were unduly prominent in the sections, and some thickening of the vessel walls was observed.

Clinical and pathological considerations.—Cases of polyglandular syndrome with symptoms pointing to the implication of two of the ductless glands are by no means rare, and the frequency with which acromegaly and exophthalmic goitre are cited in the same patient is the best known example of such an occurrence. The relationship of such cases to the functions of the genital organs has also evoked considerable interest, and

the results of a large amount of experimental work in animals have done much to place our views on a sounder basis. The opportunity of determining the condition of the glands in cases with a symptom-complex pointing to implication of pituitary, suprarenal, and ovary is thus of importance. In considering the locus of the primary affection we must take into consideration the inter-relationship and inter-dependence on each other of the internal secretory glands, and the influence of the withdrawal or increased action of the secretion of one or other on the structure and functions of the rest. We must also take into consideration the question as to how far the lesions met with in this case must be regarded as causative, or as a manifestation of a disturbance of glands which act in harmony and have been influenced by an unknown cause. The definite clinical history of an illness interpreted at the beginning as a "gastritis," and later as "intestinal" in character is such as to make the possibility of a gastro-intestinal toxæmia a probable explanation of the first stage in the unsettling of the glandular activities. The case will be considered from the point of view of pituitary, suprarenal, and ovarian relationship.

Pituitary relationship.—The study of experimental hypopituitarism and of cases of dyspituitarism affords us examples of changes such as we have encountered in the histological examination of our case. The nature of the pituitary growth was that of a small adenoma of simple character, situated in the anterior lobe, and having microscopical appearances resembling the structure of the intermediate part of the gland. The size of the tumour was such that of itself it could not be responsible for much of the symptoms. There were seen, however, in the gland other changes indicating an increased activity, while at the same time exhaustive or undue call on the function of the gland had taken place.

The clinical history also permits of such an interpretation, and a case closely resembling our case has been described by Cushing⁴ as an example of polyglandular syndrome with pituitary involvement and probably hyperadrenalism (Case XLV of his series). There was the same cessation of menstruation, severe headache, slight exophthalmos, intracranial discomfort, and extreme muscular weakness. There was high tension of the pulse, and high blood-pressure, with definite

tendency towards hæmophilia. She also became stout, and the abdominal fat was coarsely nodular and painful, and there was a distinct growth of hair and moustache, with marked falling out of the hair of the scalp. Temporary relief only was obtained from the operation of subtemporal decompression, and an exploration of the adrenals was under consideration.

Turney's¹² case also presented certain features in common, and was regarded by him as one of pituitary sexual gland syndrome. The menstruation ceased, she became stout, bruises readily appeared, and she had a high blood-pressure. A pressor substance was present in the urine in considerable quantity.

Suprarenal relationship.—The tumour in the suprarenal was also of insignificant character. It presented the appearances of a cortical adenoma or hypernephroma, and was situated in the medullary portion of the gland. The occurrence of such growths is fairly common, and by some writers their presence has been regarded as of little significance when of small size.

Rolleston¹⁰ regards them as met with in 0·2 to 0·7 per cent of autopsies, but such a figure is somewhat larger than that of my experience, and he draws attention to the association of such growths and hyperplasias of the gland with granular kidneys, arterio-sclerosis, and high blood-pressure. The additional feature of slight hyperplasia in both suprarenals was also of no great account, but sufficient to show that increased activity had been called forth.

The occurrence of changes in secondary sex characteristics in cases of hyperplasia and tumours of the suprarenal gland is now well established, and has received considerable publicity. Bulloch and Sequeira,⁵ Glynn,⁶ and others have collected and reviewed most of the cases. In children such changes are almost invariably present, and in the case of females the male sexual characters are developed at the expense of the female, while in males they are practically always associated with precocity of the sexual organs and secondary characteristics.

In adult females before the menopause such changes are frequently present, and may be of a most marked character. The genital organs undergo atrophy; menstruation ceases; the breasts shrink; and the masculine characters develop, with growth of hair on face, alteration of voice and manner. After

the menopause the changes are not met with. The case of Glynn and Hewetson⁷ is a notable example. In this case a large hypernephroma was present on the left side. It was removed, but death took place from shock after operation. The *post-mortem* examination showed no evidence of metastasis. The uterus was atrophied, and the ovaries small and fibrotic. No reference is made to the condition of the other suprarenal or the other ductless glands in the record of the case.

The changes met with in the blood-vessels and kidneys were such as might be attributed to prolonged or continued rise of blood-pressure, and may have been associated with the enlargement of the suprarenals and an increased production of adrenin. Although Wiesel,¹³ Klotz,¹ and others have drawn attention to this condition, and Jores and others have demonstrated the result of adrenin injections in the production of increased blood pressure and subsequent vascular changes, much remains to be done to establish whether the adrenal changes with hypertrophy and increased secretion may be regarded as the primary disturbance.

Ovarian relationship.—The condition of the ovary corresponded with the appearances which have been described in cases of removal of the pars anterior of the pituitary body. The changes in it were of the nature of a fibrosis, with disappearance of the follicles; while the infantile character of the uterus corresponded equally with the appearance of this type of lesion or that resulting from castration.

Tandler, Gross,⁹ and others have endeavoured to attribute the cause of the changes to the atrophy of the genital glands. They regard the lesions of the pituitary and other glands as being of a secondary character, such as are met with after castration and in the eunuchoid state. On the other hand, a careful observer like Blair Bell^{2, 3} fails to accept this explanation in such a case, and he is of the opinion that it is more than likely that the genital atrophy is subsequent to the pituitary lesion and other changes. He would limit the influence of the ovary in the general metabolism to a dependence on its primary reproductive function.

The changes in the thyroid might be regarded as the result of the changes in the other glands.

To summarise, we must admit the presence of a lesion in two

of the ductless glands, with disturbance of their function, and associated with this were noted structural changes and disturbed function of the other glands.

If the histological appearances are of any value in the estimation of the case, we should be influenced in favour of the pituitary disturbance as the chief factor, and would regard the case as primarily one of hypopituitarism. The influence of the pituitary secretion on the ovary is stimulating in character, and its withdrawal leads to loss of sexual characteristics and atrophic changes. Its influence on the suprarenal and thyroid, on the other hand, may be regarded as inhibitory, and decrease of its function may allow of a hyperfunctioning of these organs, with, in the case of the former, symptoms of hyperadrenalism and development of the secondary male sexual characteristics.

I have to express my thanks for the clinical record of the case while the patient was under treatment in Victoria Infirmary to Dr. Alexander Napier, Physician to the Infirmary, and to Dr. Gabriel De Kock, House Physician, who reported the case.

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THE TREATMENT OF IMPACTED BREECH CASES.*

By ROBERT JARDINE, M.D., F.R.F.P.S.G.,

Visiting Obstetrician and Gynaecologist, Glasgow Royal Maternity
and Women's Hospital.

WHEN your Council asked me if I would open a discussion in this Society, it so happened that I had just had an interesting case of impacted breech under my care, so I decided to discuss the treatment of such cases. Breech presentations are not very common, and many of the cases give no trouble; but when you meet with a case of impaction, especially in a primipara, you have an extremely difficult case to deal with, and the chances of saving the child are not good. Something like 20 per cent of children born by the breech are lost, and in impacted cases the percentage is even higher.

Many years ago, when I had charge of the West-End Branch of the Maternity Hospital, the late Dr. Lindsay Steven asked me if I could explain to him why some breech cases were so difficult to deliver. He did not believe in the usual explanation given in the books of the splint action of the extended legs preventing lateral flexion of the body, and I agreed with him, but at that time I could not offer any definite solution of the problem; but I determined to find the solution, if I could, and I am convinced that I can explain the matter to you to-night.

In a breech presentation, the child is in a flexed attitude—the body is flexed, the thighs are flexed on the abdomen, the legs are flexed on the thighs, and the feet are flexed upon the legs, so that the feet are low down and can easily be felt. If the pelvis is contracted there may be impaction, because the breech is too large to pass down, but I am not dealing with cases of that kind. The kind of impaction I am to speak about is that in which the legs are extended, and the feet of the child are high up on its chest.

In an ordinary breech case the anterior hip is the leading

* Delivered before the Northern Medical Society, 2nd February, 1915.

part of the child, and as the child descends this hip rotates forwards when it impinges on the pelvic floor. The posterior hip is then forced over the perineum by lateral flexion of the body, or, in other words, the body is bent laterally round under the symphysis pubis. The point I want you to notice is that lateral flexion of the body of the child occurs at the outlet; in fact, it corresponds to the movement of extension in a first vertex presentation.

In these cases of impaction with the legs extended, the membranes usually rupture early before there is any dilatation of the os, and the liquor amnii quickly drains away. The uterus becomes closely applied to the child, and the retraction ring forms and grasps the child's body round beneath the knees, or in some cases, just beneath the feet. The ring forms a very distinct ledge, and with each uterine contraction it contracts and prevents descent. The breech is not low down in the pelvic cavity, but at the brim. The dilatation of the cervix is very slow, and by the time it has fully occurred the ring has gripped the child so firmly that descent is prevented. In some cases you can see a sulcus running across the abdomen two or three inches below the umbilicus, and this indicates the position of the ring, but you may not be able to see any indication of its presence, if the abdominal wall is thick. It can be easily made out by a careful internal examination with the patient deeply anæsthetised. Pass your flattened-out hand up along the front of the child, and you will find a very distinct ledge running round the inside of the uterus. Remember that the lower uterine segment is thinned out, and it may be ruptured, if care is not taken.

Some observers say that the ring forms at the internal os, but I do not agree with that view. I believe it forms higher up. By some it is called a contraction ring; but contraction in a muscle is not permanent, as it is followed by relaxation. There is no relaxation in these cases, not even under deep anæsthesia, and, therefore, I prefer the term retraction ring.

The usual explanation which is given of why the child does not descend is that lateral flexion of the body is prevented by the extended legs acting as splints. To act as splints the legs must be fixed at both ends, and they must be rigid. The feet-ends of the legs are not fixed, and, as you know, the legs

of a new-born child can quite easily be bent sideways at the knees sufficiently to allow of lateral flexion of the body. But here is another point which has been entirely overlooked; lateral flexion of the body occurs when the breech is being born, not when it is entering the brim of the pelvis. In these cases of impaction with extended legs, the breech is at the brim or only partially through it, and I fail to see what good lateral flexion of the body at this point could effect. So far as I can see, it would be a hindrance to the descent of the body. It is only below the brim that the canal becomes curved, and bending of the body is not necessary until it is passing through the lower part of the curved canal. From a theoretical point of view, I think these conclusions are quite sound, but I am not basing them upon theory, but upon the experience of many cases.

Treatment.—When you recognise such a case, do not wait for full dilatation of the os, because the longer you wait the greater will be the obstruction from the retraction ring. Have the patient deeply anæsthetised, and finish the dilatation manually and deliver the child. Various methods of delivery are advised in breech cases, such as the use of forceps, or traction by means of a fillet. In these cases, neither of these methods is of any use. The forceps will slip off the breech, and if the fillet method succeeds you will probably break the femur. The blunt hook has been used, but I have no hesitation in saying it should never be used when the child is alive. Some years ago I was called to a case where the attendant had tried to deliver an impacted case by means of a blunt hook, but he had failed, although he had used a great amount of force. I delivered the child in the way which I shall now describe, and I found that in its groin there was a deep wound which had nearly penetrated into the abdominal cavity. I closed it with three sutures, and it healed all right. I mention this, because I wish to warn you against using a blunt hook on a living child. If the child is dead, it does not matter how much damage may be done to it, but if it is alive it is another matter.

The method of delivery which I practise in these cases is as follows:—When the patient is deeply anæsthetised, and the os

is fully dilated, the flattened-out hand is passed up along the front of the child and a foot is grasped, and the leg is swung inwards over the front of the child and gradually brought down past the retraction ring. This manipulation must be done very carefully, as it must be borne in mind that the lower uterine segment is very thin, and there is risk of its rupture. When the leg is brought down, traction upon it will bring the body down, but an assistant should firmly compress the fundus so as to keep the head flexed and the arms down. The remainder of the delivery is accomplished in the usual way. In delivering breech cases, always have firm supra-pubic pressure applied in preference to making traction from below. In this way the head will be pushed through the brim flexed, and the arms will be prevented from going up.

I am firmly convinced that sufficient attention has not been paid to the retraction ring as a cause of obstruction in labour. It is usually spoken about as a result of obstructed labour in a contracted pelvis or in a transverse presentation, but you will find very little reference in text-books to it as a cause of obstruction. I have seen it causing obstruction in cranial presentations where it had formed behind the head round the neck of the child, and what is more extraordinary, in front of the head of the child before the membranes had ruptured. In the latter case I gave the patient full doses of morphia, but no relaxation occurred, so I did Cæsarean section and saved the mother and child. I saw a similar case under Professor Cameron's care, but the membranes were ruptured when the patient was admitted. No relaxation occurred under morphia, and he did a section with favourable results for mother and child. Various drugs such as morphia, amyl nitrite, atropine, &c., have been suggested as likely to be useful to cause relaxation of the ring. Morphia is the only one I have tried, and it was of no use. As the deepest surgical anæsthesia does not cause relaxation, I do not think any of these drugs is likely to do so. In one of my cases, where the ring had formed round the neck of the child, I had to deal with a typical hour-glass contraction of the uterus in the third stage of labour after the child had been delivered by craniotomy. In that case, the patient had had several doses of morphia to relax the cervix during the second stage of labour.

Obituary.

JOHN BAIRD HUNTER, M.D. GLASG.,
PAISLEY.

WE regret to announce the death of Dr. J. B. Hunter, which occurred at his residence on 4th February. Dr. Hunter, who was Paisley's oldest medical practitioner, studied medicine at Glasgow University, where he took the degree of M.D. in 1862. He had thus been engaged in the practice of his profession for fifty-three years, and when he attained his jubilee as a doctor he was entertained to dinner by the medical faculty of Paisley, who presented him with an interesting memento of the occasion. He filled many posts in the burgh, and at the time of his death was parochial medical officer for its second district, and acted as medical referee for many assurance societies. His interest in the town was shown by his presenting to it the statue of Queen Victoria in Dunn Square. Dr. Hunter, who was unmarried, died at the ripe age of 77 years.

GEORGE NICOL WILSON, M.D. ABERD., D.P.H.,
GREENOCK.

WE regret to announce the death of Dr. G. N. Wilson, which took place in Greenock on 28th January. Dr. Wilson, who was born in Macduff, studied medicine in the University of Aberdeen, where he took the degrees of M.B., C.M., in 1887, following this up at a later date by taking the D.P.H. in 1903, and the M.D., with commendation, in 1904. After graduation he spent some years abroad, and held medical appointments first in Mexico and, later, in North Borneo, where he received Government recognition for his work in reducing the mortality from beri-beri. Returning to this country, he settled in practice at

Hebburn-on-Tyne, where he was appointed medical officer of health. He afterwards removed to Aberdeen, and while there devoted much work to the subject of measles, a study of which disease constituted his thesis for the M.D. degree. Since 1905 he had been attached to the offices of the Glasgow Port Sanitary Authority at Greenock. His published writings relate to subjects connected with infectious diseases and with port sanitation, and have appeared in various journals devoted to public health. A man of genial temperament, he was well known in Greenock and highly esteemed by all who knew him, and his death at the age of 48 years will be mourned by a wide circle of friends.

WILLIAM JAMES ALEXANDER WALKER, M.B., CH.B. GLASG.,
MELBOURNE.

WE regret to announce the death of Dr. W. J. A. Walker, which took place on 24th December, 1914. Dr. Walker was a native of Partick and a student of Glasgow University, where he took the degrees of M.B., Ch.B., in 1897. After graduation he became resident medical officer at Knightswood Fever Hospital, and, later, assistant medical officer at Gartloch Asylum. He then proceeded abroad, and was for a time surgeon to the British Consulate at Bussorah, now better known to us as Basra from the recent military operations. He settled ultimately in Melbourne, but was at Denial Bay, South Australia, at the time of his sudden death.

ELIZABETH NESS ROSS, M.B., CH.B. GLASG.,
PERSIA.

WE regret to announce the death of Miss E. N. Ross, M.B., Ch.B., which occurred at Kragujevatz, Serbia, on 14th February, from typhus fever. Miss Ross, who was a student of Glasgow University, graduated in 1901, and proceeded shortly afterwards to London, studying tropical medicine there preparatory to leaving for Persia as assistant to an Armenian physician. Soon after her arrival in Persia, however, she established herself

independently, doing much good work and leading a somewhat adventurous life. She came home about three years ago, but went out again to a post under the Persian Government. She remained in Persia till the outbreak of war, upon which, under the auspices of the Russian Government, she went to Serbia for Red Cross work. There in the course of her duty she contracted the fatal illness throughout which she was nursed by the staff of the Scottish Women's Hospital at Kragujevatz.

Miss Ross, who was a Fellow of the Society of Tropical Medicine, had held one or two minor hospital appointments before leaving this country, and had published several interesting medical papers, which gave promise of a distinguished future. She was a woman of much fascination and of many acquirements, whose death will be mourned by the many friends to whom she endeared herself, as well as by her brother and sister, both members of the medical profession. That profession has already suffered heavily in the war, but it has sustained few more tragic losses than that of this young and brilliant life.

JAMES ROSS WATT, M.B., J.P.,
AYR.

THE many friends of Dr. J. R. Watt, of Ayr, received a shock when they heard the news of his very sudden death, which took place at his residence, Amisfield, on 2nd ult. For the past two years he had known that his condition of health was not satisfactory, and he had, under medical advice, undergone a course of treatment at one of the English spas. Although he received marked benefit from this he did not fully regain his former health, but he was able to continue in active practice to the last day of his life. On this day also he had seen off his son, who had received a temporary commission in the R.A.M.C., and had been ordered on duty to the Northern Command of England. During the night he was seized with an obstruction to his breathing, and the noise awakened his wife. Medical aid was at once summoned and restoratives applied. In a few hours thereafter, however, he died quietly in his sleep.

Dr. Watt was born at Paxton, Berwickshire, in 1845, and

afterwards the family removed to Hamilton, in which place he spent his boyhood. He studied medicine in the University of Glasgow, graduating M.B. in 1871. After some time spent as an assistant in different practices he commenced for himself in Innellan; but a few months later (1872) he removed to Ayr, where he remained till his death. His commanding presence, as he moved to and fro in the community in his long, busy career, was familiar to several generations of townspeople. Outside the sphere of his professional work, to which he was closely devoted, he had few interests, and rarely appeared in any public capacity. He, however, took a keen interest in music, and was connected with various local musical organisations. He was formerly a medical officer to the local Rifle Volunteers, but after six or seven years resigned his commission. He was appointed a Justice of the Peace in 1909.

Of genial and most approachable nature, a large-hearted and kindly man, he was highly esteemed by a large circle of patients for his personal as well as for his professional qualities. Dr. Watt, who was in his seventieth year, is survived by a widow, one daughter, and three sons. Of the latter, two are abroad, and the third was associated in medical practice with his father.

CURRENT TOPICS.

APPOINTMENTS.—The following appointments have recently been made:—

E. P. Cathcart, M.D.Glasg. (M.B., 1900), Grieve Lecturer in Physiological Chemistry, University of Glasgow, to the London University Chair of Physiology, tenable at the London Hospital Medical School.

H. L. G. Leask, M.D.Glasg. (M.B., 1888), F.R.F.P.S., to be Surgeon to the Glasgow Eye Infirmary.

Royal Navy (18th January): Surgeon A. Fairley, M.B., Ch.B. Glasg. (1907), to *Victory*, additional for disposal, to date 16th January.

29th January: To be temporary Surgeon—W. B. Cunningham, M.B., Ch.B.Glasg. (1909).

1st February: Temporary Surgeon W. C. Anderson, M.B., Ch.B.Glasg. (1913), to *Pembroke III*, for R.N. Air Service.

5th February: Temporary Surgeon W. B. Cunningham to *Pembroke*, additional as Medical Officer.

Royal Army Medical Corps (19th December): *Territorial Force*—1st Lowland Field Ambulance—Lieutenant N. M'Innes, M.B., Ch.B.Glasg. (1909), to be Captain (temporary).

2nd January: *Territorial Force*—Lowland Mounted Brigade Field Ambulance—Captain R. Y. Anderson, M.B., C.M.Ed. (Ibrox), to be Major (temporary).

22nd January: To be temporary Lieutenants—J. Gibson, M.B., Ch.B.Glasg. (1911); J. D. Finlay, M.B., C.M.Glasg. (1893).

25th January: *Territorial Force*—West Lancashire Casualty Clearing Station—Lieutenant W. N. West Watson, M.D.Glasg. (M.B., 1903), to be Lieutenant.

2nd February: *Territorial Force*—4th Scottish General Hospital—Lieutenant J. H. Martin, M.D.Glasg. (M.B., 1907),

from attached to units other than medical units, to be Captain, whose services will be available on mobilisation.

3rd February: Lieutenant R. D. Goldie, M.B., Ch.B.Glasg. (1909), to be Captain. To be temporary Lieutenants—F. H. Young, M.B., Ch.B.Glasg. (1911); A. Poole, M.B., Ch.B.Glasg. (1911).

9th February: To be Lieutenant-Colonel (temporary)—R. T. Leiper, M.B., Ch.B.Glasg. (1904), D.Sc.

10th February: To be temporary Lieutenants—G. F. Barr, M.B., Ch.B.Glasg. (1914); G. M'Callum, M.B., Ch.B.Glasg. (1914); T. S. Goodwin, M.B., Ch.B.Glasg. (1902); J. S. Prentice, M.B., Ch.B.Glasg. (1914).

13th February: *Territorial Force*—4th Scottish General Hospital—W. A. Campbell, M.B., Ch.B.Glasg. (1906), F.R.C.S., to be Captain, whose services will be available on mobilisation.

17th February: To be temporary Lieutenants—J. R. Turner, M.B., C.M.Glasg. (1894); J. A. G. Burton, M.B., Ch.B.Glasg. (1909); J. R. M'Gilvray, M.B., Ch.B.Glasg. (1906); W. D. Dunlop, M.B., Ch.B.Glasg. (1910); T. M. Watt, M.B., Ch.B.Glasg. (1908).

APPOINTMENT FOR DR. CATHCART.—Our readers will notice with interest in our "Appointments" pages that Dr. E. P. Cathcart, Grieve Lecturer in Physiological Chemistry in the University, has been appointed to the London University Chair of Physiology, tenable at the London Hospital Medical College. Dr. Cathcart was a brilliant student of Glasgow University, taking his M.B. degree in 1900, and gaining the gold medal for his thesis in 1904. In 1908 he took the degree of D.Sc. His work since graduation has been exclusively physiological, and has already brought him honour and recognition from many quarters. His papers are many, and for the most part devoted to the subject of metabolism, the article on "Nutrition," in the eleventh edition of the *Encyclopædia Britannica*, being written by him in collaboration with Professor Noël Paton. He has been an enthusiastic supporter of the University contingent of the Officers' Training Corps, which owes much to his capacity for organisation. The University will miss him, but she is confident that he will prove himself no unworthy successor of Professor Leonard Hill.

HONOURS FOR THE R.A.M.C.—Among the many brave officers and men mentioned in Sir John French's recent despatches for gallant and distinguished conduct in the field, and subsequently the recipients of honours or promotion at the hands of His Majesty, our readers must have noticed with peculiar pleasure how large is the number of medical names. Of these some are the names of Glasgow graduates, in whose honours we rejoice as reflecting lustre on our city and our University, and with whom we rejoice as in the good fortune of our friends. Brevet-Colonel Sir W. B. Leishman, M.B., F.R.S., to be a Companion of the Order of the Bath, is a son of the University, his father, of whom affectionate memories are still present to the minds of many of us, having been the predecessor of the present occupant of the Chair of Midwifery. Sir William has done invaluable work for the health of the army, and it is largely owing to his labours that enteric fever has been so successfully combated throughout the present campaign. His work on kala-azar, to mention but one other of his more outstanding contributions to medicine, has definitely established the nature of the disease, and his name is forever immortalised in its alternative title of Leishmaniasis.

Major L. W. Harrison, to be a Companion of the D.S.O., is a graduate of Glasgow University, where he took the degrees of M.B., Ch.B., in 1897. In collaboration with Major C. E. Pollock, he published, in 1912, a *Manual of Gonococcal Infections*, which forms one of the "Oxford Medical Publications," and is an authoritative and valuable contribution to the subject, and in the following year he contributed the sections on "Clinical Course and Treatment" to the *Manual of Venereal Diseases*, which appeared in the same series, and expresses the most recent results of the study of these infections in the army.

Major J. M. Sloan, D.S.O., to be Brevet Lieutenant-Colonel, took the degrees of M.B., Ch.B., at Glasgow University in 1898, thereafter joining the Royal Army Medical Corps. He served throughout the Boer War, being in Ladysmith during the siege, and after its relief joining the Scottish Horse as a volunteer, and being awarded the D.S.O. for bravery on the field. At the close of the war he became R.A.M.C. Adjutant at Aberdeen, and was promoted Major. He spent three years there, and since

then has served in India, returning with the first contingent of Indian troops as Deputy Assistant-Director of Medical Service. He is the eldest son of Dr. Samuel Sloan, who has also two other sons, Lieutenant-Colonel Sloan and Captain Sloan, serving with the Scottish Horse.

Captain Hugo Given Robertson, M.B., Ch.B., is also a student of Glasgow University, where he graduated in 1908. After acting as house-physician in Ruchill and Belvidere hospitals, he passed in London the examinations admitting him to the R.A.M.C., thereafter serving for two years in England, and then for two years in Malta, where he was promoted to the rank of Captain. A year ago he went with a detachment of the R.A.M.C. to give service in the war in Albania. He was sent to the front upon the outbreak of the present war, and while tending wounded, three weeks later, in a house under shell-fire, he was captured by the enemy, and is now a prisoner in Germany. His aunt, Miss Jennie Given, with whom he lived in Glasgow, has organised a series of very successful concerts for the Red Cross funds.

Temporary Lieutenant J. R. C. Greenlees, M.B., Ch.B., a son of Mr. M. Greenlees, of Dowanhill, is a graduate of Cambridge, where he took the degree of M.B. in 1907. He studied at both Cambridge and Glasgow Universities, and holds the post of Dispensary Physician to the Western Infirmary. He is also prominent in the athletic world, having played in the international Rugby teams against England, Wales, and Ireland in 1902 and 1903, and having been last season president of the Scottish Rugby Union.

GLASGOW UNIVERSITY STATISTICAL REPORT.—The report of statistics, &c., relative to the University of Glasgow for the academical year from 1st October, 1913, to 30th September, 1914, was recently issued by the secretary of the University Court. During the year the teaching staff consisted of 36 professors, 81 lecturers, and 85 assistants and demonstrators. The salaries paid to the principal and professors amounted in all to £27,877, 1s.; to lecturers, £17,803, 0s. 11d.; and to assistants and demonstrators, £6,858, 12s. 3d. Pensions amounting to £5,493, 5s. 8d. were paid to retired professors.

The total number of matriculated students was 2,916

(including 662 women), as compared with 2,835 (including 648 women) in the preceding year. Of these, 1,275 (including 499 women) were enrolled in the Faculty of Arts, 548 (including 39 women) in the Faculty of Science, 69 in the Faculty of Theology, 821 (including 109 women) in the Faculty of Medicine, 178 in the Faculty of Law, and 25 (including 15 women) in a single class.

The following degrees were conferred in the Faculty of Medicine:—M.D., with honours, 3; with high commendation, 2; with commendation, 3; ordinary, 16; M.B., Ch.B., with honours, 3; with commendation, 14; ordinary, 98—total, 139.

The total number of degrees granted in all the Faculties was 566, as compared with 535 in the preceding year.

At 30th September the number of members of the General Council of the University was 8,914, as against 8,546 in the previous year.

The principal bequests intimated or received during the year were:—£4,000 by the late Mrs. Caird, widow of Principal Caird, for the creation of two scholarships in classics and mental philosophy; the funds of the Principal Caird (Private) Memorial Fund handed over by the Executive Committee, amounting to about £200 per annum, to be applied in augmenting the salaries of the Professor of Divinity, the Professor of Ecclesiastical History, and the Professor of Biblical Criticism; £5,000 by the late Mr. William Weir of Kildonan, Ayrshire, to be applied in providing the salary of an assistant in *Materia Medica*; £25,000 by the late Dr. Gavin P. Tennent, Glasgow, to be applied for such object or objects in connection with the Faculty of Medicine as his trustees might determine; one-third of the residue of the estate of Miss Mary Jane Murray, Glasgow, for the purpose of founding a scholarship in Queen Margaret College, to be awarded annually to a student who is following out the teaching profession; the residue of the whole means and estate of the late Mr. W. B. Faulds, writer, Glasgow (amounting to between £20,000 and £25,000), for the purpose of founding a scholarship in each of the Faculties of Arts, Medicine, Divinity, and Law; the allocation by the Carnegie trustees of the Universities of Scotland, under their third quinquennial distribution of grants for five years from 1st October, 1913, of £5,000 towards the University Library,

and £45,000 towards the provision of new buildings for the Faculty of Arts and the Department of Zoology.

THE TRIPLE QUALIFICATION.—The committee of management of the Triple Qualification begs to announce to students who have undertaken approved service with His Majesty's Forces that applications for partial recognition of such work in lieu of curriculum will be individually considered. Steps will be taken in each case to grant such concessions as appear to the committee to be in accordance with the recommendations of the General Medical Council.

ANTITYPHOID INOCULATION.—The Research Defence Society has recently issued a pamphlet which includes some interesting figures illustrating the protective effect of antityphoid inoculation. The South African War formed the first example of its use on a large scale under war conditions. Only a limited number of the troops were inoculated, but enteric was twice as common among the non-protected as the protected. During the Spanish-American War there were in the camps at Chickamauga and elsewhere 20,000 cases of enteric out of 120,000 men, with a case-mortality of 7 per cent. Of the volunteer regiments mobilised, 90 per cent became infected with enteric within eight weeks from the date of mobilisation. In the later mobilisation in Texas and California, when inoculation was in use, there was only one case.

Sir William Leishman, in a letter published on 22nd August, 1914, states that "about 93 per cent of the British garrison of India have been protected by inoculation, and typhoid fever, which used to cost us from 300 to 600 deaths annually, was last year responsible for less than 20 deaths. Inoculation was made compulsory in the American army in 1911, and has practically abolished the disease; in 1913 there were only 3 cases and no deaths in the entire army of over 90,000 men."

In Avignon, in the South of France, during the summer of 1912, typhoid fever broke out in the barracks. Of 2,053 men 1,366 were protected and 687 were not. The non-protected had 155 cases of typhoid fever, of whom 21 died; the protected had not one case. In the winter of 1913 the French Senate

resolved that the protective treatment should be made compulsory throughout the French army, and in special circumstances among the reservists. The result is shown in a letter by Major-General Turner, published in the *Times* on 5th February, where it is stated that the French troops are practically immune from enteric fever. The experience of the Canadian Pacific Railway leads to the same conclusion. In their "camps" there were in 1911, among 5,500 protected men, only two cases; among 4,500 non-protected, 220 cases; in 1913, among 8,400 protected men, one case; among 2,000 non-protected, 76 cases.

The *British Medical Journal*, of 6th February, gives the figures for the Expeditionary Force. Among those not inoculated within two years there were 305 cases and 34 deaths, a mortality of 11 per cent of the cases. Among those inoculated with one dose within two years there were 83 cases and 1 death, a mortality of 1·2 per cent; while among those inoculated with two doses within two years there were 33 cases and no deaths. The number inoculated in each class is not stated, nor the proportion between inoculated and uninoculated, but the difference in mortality furnishes a striking proof of the efficacy of antityphoid inoculation, which in the majority of cases is attended by only trifling local or constitutional disturbance.

BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.—In our February issue was published a list of the names of the Scottish Committee of the above fund, and of those to whom subscriptions should be sent. We have since received from the Glasgow Central Division of the British Medical Association a statement calling attention to the urgency of the need. The secretary, Dr. W. S. Syme, will be glad to receive and forward contributions from members of the Division.

The appeal for the doctors and pharmacists is an appeal not for them only, but for the downtrodden and courageous population of Belgium, which, unable or unwilling to seek refuge in a temporary exile, has faced insult and privation upon its own soil and in the endeavour to preserve its own homes from destruction. Themselves upon the reduced rations which they must share with the rest of the population, deprived of their instruments and appliances, which in many cases have been

appropriated by the invaders, half-starved and weaponless, the doctors of Belgium are powerless to bring aid to the sick, or to stem the tide of the epidemics, of which there is too much reason to fear the onset in a devitalised community. He who helps the doctors to survive this crisis will be the saviour of more lives than theirs.

SCARCITY OF DOCTORS IN CIVIL PRACTICE.—Dr. Norman Walker, Convener of the Scottish Medical Service Emergency Committee, delivered an address on "The Medical Profession and the War" at a meeting of medical practitioners and senior students in the Royal College of Surgeons, Edinburgh, on 8th February. Mr. Hodsdon, President of the College, occupied the chair, and Sir Donald MacAlister, President of the General Medical Council, also took part in the proceedings.

The chairman said the medical profession in this country was totally unprepared for the emergency which arose six months ago. Many of the doctors attached to various units were not prepared, and did not anticipate, that they would be called away from their practice at a moment's notice. At that moment there were men who had not been back to their practice since they were called up during the mobilisation in August. After the war broke out, the chairman of the Scottish Committee of the British Medical Association, Dr. Hamilton, called a meeting in Edinburgh, at which a committee was formed called the Scottish Medical Service Emergency Committee, and that Committee during the months that had elapsed had been at work in various ways to assist those who were with the colours. Owing to military reasons a practitioner attached to a North of Scotland unit might find himself in the middle of England, and a practitioner in the South of England might find himself in the North of Scotland. Under these circumstances the doctors could not attend to their civil practice, which would otherwise have been possible with the time at their disposal. Sir Donald MacAlister, as chairman of the Executive Committee of the Medical Council, interested himself in this matter, and as a result of the representations he made to the War Office, the Director-General had now issued an order by which it was possible to exchange.

Dr. Norman Walker, explaining the formation of the Emergency

Committee, said that the work of the Committee had extended far beyond that of introducing locums to men who wanted them. The average man in a town had no idea of the dislocation of practice in the country. It had increased, and was still increasing, and if they were to avoid a serious breakdown in the medical service in Scotland they must realise the situation. More demands would be made upon them, and the supplies would have to be very carefully husbanded. They had to supply recruits for two armies—the King's forces and the standing army for home defence against the constant enemies, disease and death. Doctors were as necessary in the army and navy as engineers, gunners, and airmen, and it was incumbent on them as a profession to make somehow such arrangements as would supply all the wants of the King's forces. Much inconvenience would be caused to the public as well as to individual doctors, and it was for that reason that they should make their arrangements *coram publico*.

Something like over one-sixth of the medical profession were already serving—nearly 7,000 out of a total of 37,000—and more were required. Where were the additional doctors to come from, for they must be supplied? He hoped no licensing body, from a sort of morbid patriotism, would admit to the profession insufficiently trained students. He held that the student's business was to work hard, and the teacher's to give more care to his teaching than he ever gave before, so that the student completed his course in the shortest possible time. It was the duty of every young graduate to ask himself seriously, "Is there any valid reason why I should not go?" and if there was no such reason, then it was his duty to offer his services. Young practitioners offered a more difficult problem. If a man had given hostages to fortune the balance should perhaps incline him to stay at home; but such a man still served his country if, by undertaking the work of one who had gone, he so loyally respected his interests that the other went with an easy mind. The work in Flanders and, later, in Germany would be very hard, and the men who were preparing for it should train as if they were preparing for an international football match. As for those of them who were older, their places were in the "home defence" army. The country districts were crying out for doctors. There would be work, and plenty of it, for all.

Those who had not been too long retired from practice should take down their armour, polish it up, and gird it on again.

Principal Sir Donald MacAlister acknowledged how cordially, as soon as it understood the difficulties they were in as regards civil practice, the Army Medical Service responded in the only way they were able to respond. "Red-tape" was a favourite criticism of Government Departments in the past, but that was not the case with the Army Medical Department at the present time. They felt that the military medical service must be the first consideration, but they were doctors as well as soldiers, and they knew the civil population must not be sacrificed if it could be saved. It was quite clear that the civil service must dispense with its ordinary superabundance of practitioners if the army was to be supplied, and the question was whether a proper reorganisation of the civil service could be achieved. For the first two or three months it looked as if it could be done without much difficulty, but difficulties that seemed at first not impossible were becoming almost impossible to overcome, and it was quite certain that the civil community would have to do with a good deal less doctoring if they were to keep the army supplied as it ought to be supplied with doctors. They had better face the situation now before in some areas the medical service altogether broke down. He believed that by a redistribution of their forces there could be provided a respectable medical service for all the civil population, but the worst of it was that while there was a superabundance in some places there was a very deficient service in others. He did not see any other machinery in existence for attempting the difficult problem of organising a redistribution than the Emergency Committee. It would be hard work, and would entail personal sacrifice on the part of a great many, but short of some such sacrifice they were in for a very awkward situation. It had been suggested that they might dispense with the luxury of the full-time medical officer for the inspection of school children, and also that they might ask retired medical practitioners to give an hour or two a day, and that they might even ask registered volunteers from neutral and friendly countries to stay here. No doubt all these resources would be called upon. A certain number of Belgians would be available, and he believed there were also coming to this country about one hundred Canadian registered surgeons, a

certain number of Australians, and a certain number of Indians.

PHYSICAL ADVANTAGES OF ARMY TRAINING.—An interesting lecture on this subject, reported in the *Times* of 5th February, was delivered at the Institute of Hygiene, London, recently by Dr. R. Murray Leslie. The lecturer said that he regarded it as very curious that at both the Central and Parliamentary recruiting offices in Whitehall, where placards and pamphlets of all kinds abounded, there was not one which referred to the value of military training in improving the physique and health of recruits, for he did not suppose there was a single physician in the country who had not been questioned by parents as to the effect joining the Army would have upon delicate or supposedly delicate sons. By the term physical advantages he meant not merely improvement in general physique as manifested by external appearance and muscular development, but also improvement in stamina, endurance, capacity for sustained effort, power of resistance to disease, and all-round fitness for work, duty, and responsibility.

M. Pignet, the French surgeon, had established that a certain relationship between height, weight, and chest measurement was essential for the bodily physique to be equal to the strain of military service. If weight and chest measurement were in the right proportion to the height of the man, the height alone mattered little in modern warfare, where success depended more on good shooting than on brute force. Small soldiers formed smaller targets for the enemy, and were lighter mounts in cavalry and horse artillery regiments.

In order to show the effects of military training Captain Black and Captain Turner, of the R.A.M.C., had estimated the physique-factor used by M. Pignet in the case of 344 recruits and found that 1·4 per cent were very strong, 3·7 per cent strong, 6·6 per cent good, 19·4 per cent medium, 25·6 per cent weak, and 20·9 very weak, and 19·4 per cent useless for military service. After three months' training there was such an improvement in the physique of the men that no fewer than one-half of those who were classed as useless for military service were now capable of service. The improved conditions under which the recruits lived had much to do with their

improved health, for it had been scientifically proved that a vitiated atmosphere and uncongenial work so affected the normal equilibrium between repair and decay that tissue waste products and poisons were retained in the system. The men got to like the healthy outdoor life and enjoyed roughing it in huts and tents so much that it was not surprising that a young University man wrote, "I could shout with the sheer joy of it all. This is the real thing."

Knowing the great physical improvement which took place, recruiting examiners occasionally exercised a wise discretion in passing ill-developed recruits, for experience had proved that their defects rapidly disappeared. He had been amazed at the extraordinary development which had taken place in flat-chested, somewhat weedy-looking young men as a result of a few months' military training. Some had improved out of all knowledge. A striking instance which had recently been brought to his notice was that of the commanding officer of a company of 250 recruits in training who received a stock of new uniforms made on measurements taken three months previously, and found that, in many cases, the clothes were much too small, and had to be returned for alterations.

Superior vitality was shown among those European nations who had adopted universal military service, and the British Army had a larger number of cases of heart disease than the Russian, Austrian, and French armies put together. The Japanese had, as the result of the adoption of national service, greatly increased the stature of their people, and had added materially to the wage-earning period of the mass of their citizens.

STATE INSURANCE: MEDICAL TREATMENT OF SAILORS AND SOLDIERS.—The Scottish Insurance Commissioners have issued a memorandum with regard to the medical treatment during the war of insured persons who belong to the Naval or Army Reserve, or to the Territorial Forces, or have enlisted in the New Army. The memorandum is in similar terms to one recently issued by the English Commissioners, and states that generally such persons are regarded as serving sailors or soldiers from the moment at which they are called up or

enlisted and accepted for service, until disbandment or discharge. During this period they are not entitled to medical or sanatorium benefits under the Insurance Acts, and, accordingly, no liability for their treatment rests on the panel practitioners by whom they have been accepted. Should any such person apply to a panel doctor for treatment he should be dealt with as follows:—A member of the Naval Reserve should be referred to the naval surgeon or agent, if there is one, in the district, and if not, he should be directed to make his own arrangement with a civil doctor. In the latter case the patient would be responsible for settling the doctor's bill, but would be eligible to receive sick allowance on making application through his commanding officer. A member of the Army Reserve, Territorial Force, or Kitchener's Army on furlough should be referred to the officer commanding the nearest military station, who in every case would communicate with the Assistant Director of Medical Services of the area in which the soldier is temporarily residing. In case of emergency, or when a soldier unfit to travel resides at a distance from a military hospital, the soldier may apply to a civil practitioner, to whom he will show his furlough paper, and who will be allowed to charge for attendance at army regulation rates. These regulations apply equally to persons who have been sent home owing to illness, and the position of soldiers and sailors is not affected by the fact that they may be permitted temporarily to continue to reside at home, even though they may be concurrently engaged in civil employment.

MEDICAL TREATMENT OF SCHOOL CHILDREN.—The following regulations are made by the Scotch Education Department as to grants to school boards in respect of the medical treatment of necessitous school children during the year ending 31st December, 1915:—

1. The Scotch Education Department will make grants to school boards acting independently or in combination with one or more other boards or with the Secondary Education Committee for the district in respect of the medical treatment of necessitous school children in terms of Section 3 of the Education (Scotland) Act, 1913.

2. Grant will be paid on the basis of the approved expenditure of the local authority during the year ending 31st December, 1915.

3. The Department will require to receive from the local authorities a proposed scheme of medical treatment for the period in question, accompanied by a detailed estimate of the cost, on the prescribed form. The scheme and estimate should reach the Department not later than 31st December, 1914.

4. Where the proposals of the local authority are approved by the Department a careful record should be kept during the year of the number and nature of the cases treated (distinguishing as far as possible the necessitous cases which may have been treated). A return will be required from the local authority before the grant is paid, giving, *inter alia*, this information, together with a detailed account of the expenditure (as well as of the receipts in non-necessitous and partly necessitous cases), and payment of the grant is conditional upon the receipt of this return on a form to be provided by the required date.

5. Where a scheme of medical treatment has been submitted in advance to the Department, approved by them as suitable and adequate, and carried out to their satisfaction, grant will be paid at the rate of one-half of the net expenditure. In other cases the Department may either pay at a lower rate or withhold grant altogether.

6. Where a local authority propose to provide special premises for the purpose of medical treatment the annual charge on account of the provision of such premises may be included in the estimate submitted to the Department, but the Department will approve such expenditure only where the local authority are able to show that it is justified by the number of children for whom treatment must be provided in terms of the Education (Scotland) Act, 1913.

7. Payment of grant under these regulations is subject to the fulfilment of the conditions laid down in the regulations, but if any of these conditions have not been fulfilled the Department may nevertheless pay the grant where there are special circumstances which would justify it.

8. In assessing grant the Department may disregard any

items of expenditure which in their opinion should not be taken into account for the purpose of the assessment.

9. If any question arises as to the interpretation of these regulations or as to the fulfilment of the conditions of grant, the decision of the Department shall be final.

MORTALITY OF GLASGOW IN 1914.—The minutes of the Health Committee, submitted at the meeting of the Corporation of Glasgow on 21st January, embodied the report of Dr. A. K. Chalmers, Medical Officer of Health, for the year 1914. The deaths during the year numbered 17,719, as compared with 17,778 in 1913, the death-rate being 16·8 per 1,000, as compared with 17·2 in 1913 and 17·7 in 1911-12. The mean rate for the six years 1855 to 1860 was 29·9; for the ten years 1861 to 1870, 30·4; for the ten years 1871 to 1880, 28·6; for the ten years 1881 to 1890, 24·5; for the ten years 1891 to 1900, 22·2; for the five years 1901 to 1905, 19·5; and for the five years 1906 to 1910, 17·3. The death-rate from infectious diseases fell from 2·253 per 1,000 in 1913 to 2·028 in 1914. The chief decreases occurred in measles and whooping-cough. Measles was prevalent in the early part of the year, while whooping-cough became increasingly prevalent towards its close. The death-rate from enteric fever was higher by 37 per 1,000,000, scarlet fever by 77, diphtheria and membranous croup by 31, and diarrhoea by 25. The prevalence of scarlet fever was maintained throughout the year. Enteric fever was also more prevalent; but although diphtheria was less prevalent than in the previous year, there was a higher mortality. 1,223 deaths were ascribed to pulmonary tuberculosis, giving a death-rate of 1·158 per 1,000 of the population, as compared with 1·413 in 1913.

GLASGOW ROYAL INFIRMARY: ANNUAL REPORT AND MEETING.—The annual report of the Glasgow Royal Infirmary, presented at the annual meeting of contributors held in the Merchants' Hall on 8th February, under the presidency of Lord Provost Dunlop, shows a large increase in work, due to the admission of wounded soldiers, and a large deficiency in ordinary revenue compared with ordinary expenditure. The superintendent's report shows that 327 soldiers were admitted, of whom 286 were treated to a conclusion, and 4 died, giving a mortality of

1·2 per cent. The daily average number in residence was 102·6, and the average length of residence of those treated to a conclusion was 29·5 days. The lowest number in the house at one time was 41.

Of civilian patients 9,964 were admitted, 303 more than in 1913. Of these 9,957 were treated to a conclusion, and 992 died, giving a mortality of 9·97 per cent, against 9·6 per cent in 1913. 383, however, died within forty-eight hours of admission, and the mortality excluding these was 6·3 per cent, against 6·2 per cent in 1913. The daily average number resident was 655, and the average length of residence of those treated to a conclusion was twenty-four days.

At the medical dispensary 8,345 patients attended for the first time against 8,290, and the total attendances were 21,685 against 16,860; at the surgical dispensary there were 8,556 first attendances against 8,291, and the total attendances were 57,526 against 48,524. The total first attendances in all departments, including those of special diseases and the electrical department, were 46,743 against 45,831, and the general total was 140,465 against 128,637. To the Glasgow Convalescent Home, Lenzie, 400 cases were sent, and to the Schaw Convalescent Home, Bearsden, 1,308. The total number of *x-ray* examinations was 6,556. The average cost of each fully occupied bed was £82, 12s. 2½d. against £78, 19s. 4d. in 1913, and the average cost of each patient treated to a conclusion was £5, 9s. 4¾d. against £5, 7s. 5¾d.

In the Ophthalmic Department 1,054 patients were treated in the wards against 1,051 in 1913; 13,460 attended the dispensary for the first time against 13,644; and the total number of attendances at the dispensary was 41,545.

The treasurer's report shows that the total ordinary revenue was £28,376, 10s. 9d. against £28,426, 18s. 2d., and the total ordinary expenditure £58,045, 17s. 1d. against £53,864, 16s. 11d., leaving a deficit of £29,669, 6s. 4d. The extraordinary revenue amounted to £29,054, 14s. 5d., and the extraordinary expenditure to £2,036, 13s. 6d. The deficit on ordinary and extraordinary revenue and expenditure was therefore £2,651, 5s. 5d., which sum had to be taken from stock accounts.

At the annual meeting there were present amongst others Lord Blythswood, Sir Samuel Chisholm, Bart., and Lady

Chisholm; Sir John Ure Primrose, Bart.; Sir David M'Vail, Dean of Guild J. D. Hedderwick, Mr. James Macfarlane, chairman of the Board of Management; Professor Glaister, the Rev. John White, the Barony; Dr. J. Maxtone Thom, superintendent of the infirmary; Mr. Timothy Warren, hon. treasurer; and Mr. Peter Rintoul, secretary.

The Lord Provost, in moving the adoption of the report, said that when the new buildings were formally opened by the King on 7th July, a month before the outbreak of the present war, none of them realised that the infirmary would soon be called upon to render valuable services in connection with the gigantic struggle going on in Europe. Like other organisations of the country which had risen to the occasion, the infirmary staff had provided nurses and doctors for service at the front in rendering aid to wounded troops. Twenty-six of their physicians and surgeons were serving either with the military forces or with the Red Cross Society, and thirty-seven of the infirmary nurses were also serving with the military authorities or with the Red Cross organisation. But this was not the only service the infirmary was rendering at the present juncture. Taking advantage of the additional accommodation which existed on account of the fact that several of the old buildings had not yet been pulled down, although the new ones were completed, the managers offered to put 120 beds in the infirmary at the disposal of the Government for the treatment of wounded soldiers and sailors, and this offer was accepted. In all, 327 soldiers had during last year been treated in the infirmary. There never was a time, be believed, when the needs of the infirmary were more deserving of support than at present. The increased expenditure was mainly due to the fact that the whole of the new buildings had been brought into operation, and it was also due in part to the number of patients treated. It was more than likely that the expenditure for the current year would be even larger than that for 1914, because of the high prices for provisions, dressings, and medicine, and other causes. Referring to the retirement from the chairmanship of Dean of Guild Hedderwick, after serving twenty-one years as a member of the board (fourteen of which he was chairman), the Lord Provost observed that the total expenditure on the reconstruction up to date had been £484,232, and the institution

was now one of the foremost of its kind in the country. The name of Dr. Hedderwick would always be associated with the gigantic task of bringing the institution up to that state of efficiency. He suggested that the meeting place on record its high appreciation of Dr. Hedderwick's services. In conclusion, he expressed the hope that those who were in a position to double their subscriptions to the infirmary would do so.

Mr. James Macfarlane, in seconding, said that the meeting was now dealing with figures which would have appalled the Board of Management twenty years ago. There were some who believed that the war would have a disastrous effect on their contributions. He did not share that view. It was surely not only the duty but the privilege of those who, by reason of age or other disqualification, were prevented from serving the country at present, to see that the poor, the sick, and the infirm were properly cared for at home. As evidence of how the infirmary was now more fully meeting the needs of the community, he mentioned that the number on the waiting list at the end of the year was 83 fewer than at the end of 1913, and that on 8th January the number waiting was 148 fewer than at the corresponding date of last year.

The report was adopted.

Sir Samuel Chisholm, in moving that the thanks of the meeting be given to the general body of subscribers, said that the Royal Infirmary was easily the first favourite with the charitable public of Glasgow, and it richly deserved that distinction. It was no slight boon to the citizens to have in their midst an institution which had received 10,291 patients in the course of a single year, and had given them, free of charge, the benefit of the highest medical and surgical skill of which the twentieth century could boast.

The Rev. John White, who seconded, said that as to the financial outlook at present, there were many citizens who were wealthier to-day because of the war than they had been in previous years, and he would make a strong appeal to them, and not simply to the working community. He felt that the community was awakening to the meaning of sacrifice. The advance of medical science had already reduced the average period of residence from almost thirty-five to a little under twenty days, and in a city like Glasgow that meant the addition

of almost 200,000 working days to the earning power of the artisan community, a fact which should strongly support the claim they were now making for increased subscriptions.

The following were re-elected managers:—Lady Chisholm, Mrs. Thomas Balmain, Messrs. William Cross, James Mc'Dermid, William Kennedy, William Shaw, David B. Anderson, Timothy Warren, Francis Henderson, John Garroway, John Glen, J. S. Craig, and James Macfarlane. Mr. John Reid, Mr. James Smith, and Mr. James D. Graham were appointed to fill vacancies caused by the retirement of other members.

Mr. Warren, in proposing a vote of thanks to the Lord Provost for presiding, said that he was sorry he could not agree with the gentlemen who had no fear for the future. The expenses were bounding up and the income was not. The infirmary's work was one that deserved the consideration of every citizen of Glasgow.

ROYAL HOSPITAL FOR SICK CHILDREN, GLASGOW.—The annual meeting of the subscribers to the Royal Hospital for Sick Children was held on 28th January in the Merchants' House, Lord Inverclyde in the chair. The report, which was presented by Lord Inverclyde, describes the opening of the new hospital at Yorkhill by Their Majesties on the occasion of the Royal visit last July. It then refers to the difficulty of staffing the new hospital owing to the absence of many of its nurses and doctors on military service, a difficulty which had determined the directors to open at first only two medical and two surgical wards. The displacement of children from Stobhill at the end of October, when the military authorities took over the whole of that hospital, had, however, induced the directors, at the request of the city parochial authorities, to open four additional wards. These are meantime held at the disposal of the Parish Council, which meets the expense of maintenance of the children. The number of cases treated during the year was 1,374, and of these 585 were medical and 789 surgical, as compared with 615 and 700 respectively in the previous year. Of the total cases admitted, 336 were infants under 1 year, and 236 were over 1 and under 2 years of age, as compared with 308 and 228 respectively last year. The continued increase in the number of very young children treated is noteworthy. During the year there were

204 deaths. At the country branch at Drumchapel many more than the regulation number of 26 cots could have been utilised. In all 144 patients were treated. At the dispensary the total number of attendances was 43,935, as compared with 47,866 in 1913. On the subject of finance it is stated that the ordinary income was £8,842, as compared with £8,234 last year. The ordinary expenditure was:—Hospital, £5,979; country branch, £1,424; dispensary, £1,628—giving a total of £9,033, and leaving a deficit of £191. In 1913 the expenditure was £7,675, and there was a surplus of £559. The directors anticipate that if the new hospital is to be fully utilised the ordinary annual revenue will have to be increased by about £10,000.

Lord Inverclyde, in moving the adoption of the report, said that it was a matter for gratification that on the day on which the new hospital was opened by Their Majesties every penny piece of the cost was paid off. The directors' responsibilities, however, did not cease there. The old hospital, he understood, cost upwards of £4,000 for upkeep each year, and the new one would cost upwards of £10,000 more for maintenance so long as it was fully occupied. There were at present in the hospital about 160 children, a fact which testified that the hospital was meeting a want. He appealed with great confidence for public support.

Dean of Guild Hedderwick, who seconded, had no fear but that the public would rally to its support and free the directors from anxiety.

Sir William Bilsland moved a resolution cordially commending to the generosity of the public of Glasgow and the West of Scotland the directors' earnest appeal for an increase of £10,000 in the annual revenue to enable them to develop fully the great resources of the new hospital.

Sir Hector Cameron seconded. While the age of patients, he pointed out, might range up to 12 years, a very large proportion of the children whom he saw in the course of a recent visit to the hospital were under 3 years. It was strongly his opinion that that was the direction in which the Children's Hospital should specialise. There was no great difficulty in the general hospitals undertaking the treatment of older children—patients who were approaching adult life. One of the great difficulties in treating children under 3 years of age was that the physician

had no means of communicating with them. Moreover, the kind of woman who was the mother of the children who came to the hospital, instead of helping the medical staff was very often rather apt to lead them astray. She had always formed a firm conviction before she arrived with her child. Diagnosis had to be arrived at by physical, chemical, and bacteriological examinations. Enormous progress had been made in recent years in this particular field on both the surgical and medical side. If he were asked to name any particular department of medical practice in which more conspicuously gratifying progress had been made in the last ten, fifteen, or twenty years he would have no hesitation in naming the affections of infancy—that was, of actual babes and children under 3 years. They were told that infants were born to trouble just as sparks flew upwards. But a great deal of the trouble was a result of ignorance on the part of parents, not perhaps culpable ignorance, but ignorance—and sometimes culpable carelessness. The vast bulk of the medical ailments of those children were due to errors of metabolism, which really meant certain chemical interchanges, in which such organs as the liver, the stomach, and the intestines were all concerned. It meant, therefore, very grave, and very often fatal, ailments due to errors of feeding and of diet, because unfortunately nowadays—whether women were to be blamed for it or not he would not attempt to say—the human animal in its infancy was the only one that was deprived in a very large measure of the divine food which was made for it, the maternal milk, and under artificial modes of feeding the difficulty was enormously increased. It required great care to feed such a child, and to bring it up in health and strength. Consequently, there was a large field of treatment for such an hospital as that. In the hospital were provided the very latest means for the feeding of children on the most proper principles. A hospital was like a battleship—it was at its best when it was newly launched. Fortunately it had longer life than a battleship, and the institution which they were that day in a sense inaugurating would not require to be rebuilt until the time, at all events, of their great-grandchildren. In conclusion Sir Hector spoke of the experience and education which the medical profession derived from the hospital, and of the indirect benefits which accrued to the general public thereby.

Office-bearers were afterwards appointed on the motion of Mr. D. H. L. Young, seconded by the Rev. Dr. Macmillan, with the Duke of Montrose as president; Sir Hector Cameron and Mr. Thomas Carlile, St. Bryde's, Dunblane, as vice-presidents and Mr. C. K. Aitken as chairman of directors.

GLASGOW EYE INFIRMARY.—The annual report of the Glasgow Eye Infirmary was submitted to the subscribers at the annual meeting held in the Merchants' House on 27th January, Sir Hector Cameron in the chair. It stated that owing to the many calls on the charity of the public consequent upon the war the amount of subscriptions and contributions to the institution from public works was rather less than last year. The directors pointed out "that since the commencement of the war the infirmary has undertaken a considerable amount of work connected with the examination of the eyes of recruits for the Army. In addition, the directors have offered beds to the War Office for the accommodation of soldiers whose eyes are injured or diseased, and they are of opinion that services of this nature (which result in a saving of monetary demands on the public from other quarters) constitute a reasonable basis of appeal for an increased measure of public support." The report showed that the number of house patients in 1914 was 1,506; the total number of new cases attending the dispensaries at Berkeley Street, 17,801; and at Charlotte Street, 7,950. The visits of patients to the dispensaries during the year numbered 70,707, or a weekly average of 1,360.

The chairman, in moving the adoption of the report, said that the financial position was rather better than last year's, and that in view of the altered conditions due to the present crisis a diminution in the contributions of the working classes was not to be wondered at. The infirmary was taking its place amongst the numerous medical charities which were doing good service for the soldiers, sailors, and recruits. It had offered beds to the War Office for the accommodation of soldiers with diseases or injuries of the eyes; and, in addition to that, it was doing valuable though unobtrusive work by examining recruits who were in danger of being declined on account of defective vision. Short-sight, long-sight, or astigmatism could be remedied by suitable lenses, so that for all practical purposes

such a man's vision was as good as any other man's. The Germans had long recognised this, but a spectacled soldier in our Army hitherto had been almost as laughable as a soldier with an umbrella. Nowadays we were becoming more sensible, and in Kitchener's Army men with spectacles or pince-nez might now and then be seen. The infirmary was doing good work in remedying such defects by supplying recruits with suitable glasses.

On the motion of Dr. Oliphant, Sir Hector Cameron was re-elected president; Mr. John Edwards, vice-president; and directors were appointed.

GLASGOW WOMEN'S PRIVATE HOSPITAL.—The twelfth annual meeting of the Glasgow Women's Private Hospital was held on 29th January at 27 West Cumberland Street. Miss Frances Melville (convener) presided. Miss Charlotte Bannerman (hon. secretary) submitted the annual report, which showed that 88 cases had been treated during the year, and that the accommodation had been taxed to its fullest extent. It was felt that in view of the increasing number of applications for admission to the hospital it would be a grave mistake to cripple the extension of the work, and arrangements were therefore being made to take over more extensive premises, with extra accommodation for patients, who, while not able to pay the full cost of an ordinary nursing home, were in a position to undertake the Hospital's highest charge and to pay a modified fee to the doctor in attendance. The financial statement showed that the ordinary income for the year amounted to £489, 13s. 4d., showing an increase of £5, 13s. 3d. in the annual subscriptions, and an increase of £19, 12s. 6d. in the board received from patients, while the total ordinary expenditure for the year amounted to £583, 15s. 5d., a decrease of £16, 16s. 11d. as compared with the preceding twelve months.

In moving the adoption of the report, Miss Melville referred to the steady increase in the applications for admission and to the consequent necessity for removing to larger premises. It seemed probable that as a result of the war there would be a further increase of the very class of patients for which the home had been opened—gentlewomen of limited means and women living alone. The change of premises would mean the

need of increased support from the public—an increase of at least £200 per annum. A further sum of £200 would also be required to furnish and equip the new premises. The report, seconded by the Rev. Mr. David Graham, was adopted, and on the motion of Mrs. Tullis office-bearers were elected.

GLASGOW CENTRAL DISPENSARY.—The annual meeting of the Glasgow Central Dispensary was held on 29th January—Mr. John Garroway presiding. The report, which was submitted by Mr. George C. Chapman, showed that 9,670 cases had been treated during the year, and that 50 persons had been operated on under anæsthetics. The financial condition of the dispensary was somewhat adversely affected by the war, and while the ordinary income amounted to £390, 8s., the expenditure was £478, 14s. 8d., leaving a deficiency of £88, 6s. 8d. on the year's working. The directors had issued a special appeal for funds, which had resulted in a sum of £517, 9s. being received. Special subscriptions and legacies had been received amounting to £711. These sums had been used to pay off an overdraft to the bank and in meeting the balance of the cost of the new premises, which has now been fully met—the total cost, including site, being £5,997, 11s. The Chairman moved the adoption of the report, which was seconded by Mr. John M. Easton, and agreed to. Votes of thanks to subscribers and directors were moved by Mr. James Smith and Dr. J. Galbraith Connal.

GLASGOW CONVALESCENT HOME.—The fiftieth annual meeting of subscribers to the Glasgow Convalescent Home, Lenzie, was held in the Religious Institution Rooms on 18th January—Ex-Deacon-Convener Service presiding. The annual reports, which were submitted by Mr. R. G. Ross, secretary, and Mr. John Pirrie, treasurer, stated that the number of patients admitted to the Home during 1914 was 1,418, a decrease of 85 as compared with the previous year; and the total expenditure was £3,124, 8s., as against £3,535, 13s. 4d. in 1913. The subscriptions amounted to £1,876, 2s. 9d., a decrease of £15, 3s. 5d. As the accounts stood, the managers had to draw a sum of £71, 14s. 2d. from the capital account to meet the year's expenditure.

The chairman, in moving the adoption of the reports, said

that the decrease in the income had only been £15, and had it not been for extraordinary repairs on the building the income would have rather more than met the expenditure.

Mr. Hugh Blair seconded, and the reports were approved.

The following directors were re-elected:—Messrs. John Pirrie, William Speirs, Hugh Blair, Angus McDougall, Samuel Marks, and Major James Hope.

ROYAL GLASGOW ASYLUM FOR THE BLIND.—The annual meeting of subscribers to this institution was held in the Trades' House on 18th January, under the presidency of Lord Provost Dunlop, who moved the adoption of the report. He stated, in the course of his address, that during the past year education and maintenance had been provided for 349 blind persons, and that the subscriptions had reached £3,187, 15s. 2d., an increase of £45, 7s. 11d. compared with the previous year. Legacies, however, had had to be drawn upon to meet the ordinary expenditure. The total sum paid to blind persons amounted to £9,061, 0s. 8d., an increase of £323, 3s. 8d.

Sir John Ure Primrose, in seconding, called attention to the valuation of the institution, which had been raised from £20 to £600, involving a rise in taxation from £5 to £249. The Corporation's yearly grant of £100 from the Common Good left the asylum to pay £149.

After discussion, an amendment that the report be not adopted was negatived by 67 to 41 votes, and the report was adopted. The following managers were elected for the ensuing year:—Messrs. J. Raeside Auld, David Barclay, J. A. Galbraith, James Miller, William Ross, the Rev. Colin Gibb, and Dr. J. Freeland Fergus.

The Lord Provost, in acknowledging a vote of thanks, recommended the directors to appeal to the Finance Committee of the Town Council for a grant of £250.

RENFREWSHIRE SCHOOLS: REPORTS OF MEDICAL INSPECTORS.—The annual reports of Dr. R. T. Young and Dr. Robert Donald, medical inspectors of schools in the county of Renfrew, were issued on 7th January by Mr. Archibald Wright, Paisley, Clerk to the Renfrew County Committee on Secondary Education.

In the No. 1 area of the county, which is under the charge of Dr. R. T. Young, 8,088 cases were attended to during the year. Routine examinations accounted for 4,819; special cases, 631; in connection with special schools, 91; re-examinations, 1,597; and home visits, 950. No prosecutions had to take place. By persistent house visiting they had endeavoured to wear down the carelessness of neglectful parents. With regard to the use of common drinking cups, he had to repeat his recommendation that all schools be supplied with upward jet drinking fountains. In one school where the drinking cups had been removed during a threatened diphtheria epidemic, it was reported to him that sore mouths and skin eruptions about the mouth were unknown among the children. The number of really insufficiently clad was now very small. He had found that even the poorest, unless they were deliberately careless, could find something which would keep their children warm. A similar remark applied to nutrition. Only occasionally did he come across children whose nutrition necessitated their being placed below the average class. The undesirable proportion between height and weight—that was, height above the average and weight below the average—was not so noticeable as last year. As regards vision, there appeared to be a decrease in the number of those found with seriously defective sight, but still the percentage was considerable. Referring to the teeth problem, he stated that the boys examined during the past year compared unfavourably with last year's returns. About 85 to 90 per cent of the children have carious teeth.

Dr. Robert Donald, in reporting on the lower district of the county, says there were 42 schools in the area, with 16,030 children, the average attendance being 14,461. In all, 10,579 examinations were made, which included 3,136 re-examinations and 1,143 special inspections of teeth and infectious diseases. No fewer than 1,441 cases were followed by the nurses to their homes. The campaign against filthy, verminous clothing had been vigorously maintained. With regard to nutrition, about 15 per cent of the total number of children examined showed rather below the average. Eyesight defects were much more common in girls than boys. Normal boys averaged 70 per cent, whereas normal girls only amounted to 63 per cent. As to teeth inspection, the policy hitherto adopted had been the

notification to parents of all cases of children having five or more teeth decayed, but little attention had been paid to the recommendation.

LITERARY INTELLIGENCE.—Messrs. J. & A. Churchill announce the early publication of *Malay Poisons and Charm Cures*, by Dr. Gimlette, a book which throws interesting light upon the witchcraft of the medicine-man, and is of scientific interest regarding the medicines and poisons of the Federated Malay States and their antidotes. The author has been eighteen years in this district, with special facilities for studying the subject. Messrs. Churchill also announce for publication two new editions:—*A Text-Book of Diseases of the Skin*, by Dr. J. H. Sequeira, Physician to the Skin Department at the London Hospital. New plates have been added to the existing ones, which are colour photographs of cases under the care of the author. *The Difficulties and Emergencies of Obstetric Practice*, by Mr. Comyns Berkeley and Mr. Victor Bonney, Obstetric Surgeons to the Middlesex Hospital. A feature of this book is the numerous illustrations, which are all original, and drawn by a medical man. They also announce the fifth edition of Sir Henry Morris' *Human Anatomy*. Amongst the contributors are Professors David Waterston and Peter Thompson, and Messrs. John Morley and F. W. Jones. As to nomenclature, the Anglicised form of the B.N.A. has been continued, excepting those cases where the Latin form is adopted into English (*e.g.*, most of the muscles), and cases where the B.N.A. term seems undesirable. To the numerous existing illustrations there have been added 160 new ones.

REVIEWS.

A Surgical Handbook. By FRANCIS M. CAIRD, M.B., and CHARLES W. CATHCART, M.B. Sixteenth Edition, Revised and Enlarged. London: Charles Griffin & Co., Limited. 1914.

WE welcome a new edition of this most valuable *Handbook*. It is a mine of useful, practical hints. We hope that from the next edition Figs. 117 and 196, with the explanatory text, will be omitted, and if the chapter on bandaging be rewritten and properly illustrated one could hardly wish for a more useful book of its kind. A new feature of this edition is the part devoted to the treatment of spinal caries.

The Anatomist's Note-Book. By A. MELVILLE PATERSON, M.D., F.R.C.S. London: Henry Frowde and Hodder & Stoughton. 1914.

WE have been accustomed in the past to find books of practical anatomy serving not only as directories but even trespassing on the domain of the systematic text-book. It is to be feared, moreover, that the less enthusiastic pupil has been tempted to depend for a large part of his systematic knowledge of the human body on the inadequate abstract furnished by such works. At the same time it must be admitted that the task of completely separating descriptive matter from direction pure and simple is by no means devoid of difficulty.

In *The Anatomist's Note-Book* Professor Melville Paterson has, in our opinion, succeeded in producing a book at once practical and free from irrelevant description.

This work may be defined as a series of concise and orderly directions for the isolation of the structures of the body. The minimum of information anent the intrinsic nature of parts is

furnished, the student being dependent for details of that knowledge upon the systematic text-books.

It is interesting to note that but few changes have been made in the names of anatomical structures, for, as the author points out, "students may be taught the new terminology, and they have access to it in systematic works."

The *Note-Book* is profusely illustrated with excellent line-drawings, and, as a rule, the printing is only on one page of each leaf so that there is ample space for manuscript notes.

The book is in its way a new departure, and its object one which we believe only an anatomist of very wide experience could attain with the success which in Dr. Paterson's manual is everywhere apparent.

On Dreams. By Professor Dr. SIGM. FREUD. Only Authorised English Translation by M. D. EDER from the Second German Edition. With an Introduction by W. LESLIE MACKENZIE, M.A., M.D., LL.D. London: William Heinemann (Rebman, Limited). 1914.

QUITE recently we reviewed in these pages Dr. Freud's *Psycho-Analysis*, hence it is not necessary to say more of this brochure than that it is an essay which serves as an introduction to the more elaborate studies of Freud and his school.

Standard Prescriptions for Insurance Practice. Compiled by C. H. GUNSON, M.B., Ch.B. London: The Scientific Press, Limited.

THE author evidently intends that his book shall become a standard, and that the names given by him to the combinations set forth in it should be used by medical practitioners in order to save much tedious writing. Further, that by its use the chemist will be saved much trouble in pricing prescriptions. This is a praiseworthy object, and perhaps he may succeed in the district of the Isle of Ely—one has doubts on the subject;

it is somewhat unlikely that the rest of the country will adopt these "standard prescriptions" as standards.

In essence we have here a compilation of prescriptions to each one of which a Latin name is given. The names are not always very happily chosen. There are also some odds and ends of information at the end and a table of doses.

What the *B.P.* and the *B.P.C.* cannot accomplish will hardly be effected by the author.

Eye, Ear, Nose, and Throat. Edited by CASEY A. WOOD, M.D., ALBERT H. ANDREWS, M.D., and WILLIAM L. BALLINGER, M.D. The Practical Medicine Series. Vol. III. Chicago: The Year Book Publishers. 1914.

WE have again pleasure in commending the volume which reviews the literature of the year in these special departments. Omissions there are, of course, such as articles dealing with "West's operation for stenosis of the nasal duct and dacryocystitis," but the editors have shown a catholic spirit and contributions from all languages and countries have been drawn upon. But then America, it has often been said, is not a nation but a heterogeneous mixture of races. This is only superficially true, however. America absorbs through all channels, but the result is Anglo-Saxon. Americans, fortunately, express themselves in English (more or less), crisp and descriptive at times, *e.g.*, "Paraffin nasal bridge building." Americanisms in spelling sometimes give one a start and often amusement, but we don't like "esophagus." There is something aristocratic about the diphthong. Is that the reason the "o" is left out?

The volume is of convenient size, well edited, and clearly printed.

Auricular Flutter. By W. T. RITCHIE, M.D., F.R.C.P.E., F.R.S.E. Edinburgh and London: W. Green & Son. 1914.

ALL interested in the new cardiology will welcome the present work from the pen of this acknowledged Edinburgh authority, more especially as it was he, along with a colleague, who, only

a few years ago, first employed the term auricular flutter in clinical medicine. While dealing more particularly with the subject indicated in the title, the book itself will be found of more general interest.

Clinical and graphic records of eleven cases of auricular flutter under the author's personal observation are detailed, and analyses made of cases recorded in the literature of the subject.

The etiology, morbid anatomy, diagnosis, prognosis, and treatment receive careful consideration at the hands of the author in separate chapters.

As electro-cardiographic methods are considered to be necessary for an accurate diagnosis of most cases of this condition, electro-cardiograms figure largely in the book, and the subject matter of the introductory chapter should enable one not otherwise familiar with these tracings to follow the intention of the writer.

The action of the vagus and sympathetic and drugs of the digitalis group occupy two chapters of interesting and instructive reading.

There are over one hundred illustrations and a good general index.

The volume is well worth a place among the large number of books now devoted to cardiac disease, and deals with an important type of cardiac failure which does not appear in many text-books.

The Operative Treatment of Fractures. By Sir W. ARBUTHNOT LANE, Bart., M.S., F.R.C.S. Second Edition. London: The Medical Publishing Co., Limited. 1914.

THAT a second edition of this work has appeared within a brief interval after the issue of the first will surprise no one. The subject of the operative treatment of fractures stands as one of the most important controversial questions in surgery at the present day, and while it might be too much to say that it has divided surgeons into opposing parties where fractures are concerned, yet the fact remains that some now adopt open operation on almost every case, while others will under no circumstances incise a limb for a recent simple fracture.

The second edition has been brought out on account of demand and with the object of adding certain skiagrams for the further elucidation of the subject.

There may be matters on which some of us do not see eye to eye with Sir Arbuthnot Lane, but we are bound to admire his unwearied diligence in the prosecution of pioneer work, and his insistence on the overwhelming importance of attention to detail. Moreover, we cannot dispute the results he has obtained.

Verhandlungen der Berliner medizinischen Gesellschaft aus dem Gesellschaftsjahre 1913. Band XLIV. Berlin: L. Schumacher. 1914.

THIS volume represents the transactions of the Berlin Medical Society for the year 1913, and is a reprint from the pages of the *Berliner klinische Wochenschrift*. It shows the customary varied programme of work, and, as before, is in two sections, the first containing the discussions and shorter papers, the second the long papers.

It is impossible fully to note the contents of the volume. We might, however, refer to such papers as those on the use of mesothorium in cancer of the female genitals, and in gouty and acute rheumatic affections. A report on a demonstration of the organs in a case of tuberculosis treated by Friedmann's method is contributed by Westenhöfer, and there is a lengthy discussion on the subject. Katzenstein reports a case of cure of paralysis of one arm by transplantation of the suprascapular nerve from the opposite brachial plexus. The suprascapular nerve on the sound side was freed, divided at the suprascapular notch and carried across the neck behind the carotid vessels, between the œsophagus and cervical vertebræ, and behind the carotid vessels on the paralysed side, and stitched into a cleft made in the brachial plexus on this side.

Max Cohn has a short communication on the presence of atmospheric air in the abdomen after laparotomy, and its effect on the heart and respiration.

The volume is supplied with a detailed table of contents, and concludes with a full index.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

MEDICINE.

Tropæolin as an Indicator for Gastric Acidity. By F. W. Rolph, A.M., M.D. (*New York Medical Journal*, 17th October, 1914).—Rolph has been struck by the discrepancy between chemical and clinical values in the so-called hyperacidity of the stomach, especially when the chemical hyperacidity is measured by decinormal sodium hydrate against Toepfer's reagent (dimethyl-amidoazobenzol). On the one hand, there may be obtained high acid values with no symptoms of hyperacidity; on the other, very little acid with quite marked symptoms. The amount of acid shown to be present by titration against Toepfer's reagent and phenolphthalein, more especially the former, has commonly been taken as the index of acidity one hour after the administration of an Ewald test breakfast. The dimethylamidoazobenzol acidity is said to constitute the hydrochloric acid present in an uncombined or free state, and the phenolphthalein acidity the sum of all the acids in the specimen. Different authorities have differing ideas as to the amount of these reagents measured necessary for a diagnosis of hyperacidity. Cases, however, are often found showing acidity below the normal limit when measured by these indicators in which there is clinical evidence of hyperacidity, and cases approaching the highest in which there is none.

The conclusion that there is free hydrochloric acid present normally in the test meal filtrate seems to the author unjustifiable, the most obvious explanation of this result being that Toepfer's reagent is not simply a reagent for free hydrochloric acid. The combination of various proteins or peptides with hydrochloric acid alters the readings. As a measure of the acids which accompany and probably produce the symptoms of hyperacidity, Rolph finds tropæolin by far the most efficient. In a fairly wide experience he has yet to discover a patient with typical symptoms of hyperacidity whose filtered Ewald test meal failed to show a red colour on the addition of a few drops of tropæolin (tropæolin, 0.5 per cent in 50 per cent alcohol), nor has he found a normal case which gave this reaction. For a better quantitative reaction he titrates with decinormal sodium hydrate against the tropæolin, the only difficulty lying in the determination of the end reaction. To 10 c.c. of the filtrate are added three drops of tropæolin solution, and then decinormal soda from a burette until the red colour is changed to an orange yellow, which is taken as the end point. This titration is

practicable only when there is hyperacidity, as normally the colour is already orange. He divides his cases into the following groups:—

1. Cases in which there are no symptoms of hyperacidity, and in which the dimethyl and phenolphthalein values are normal or subnormal. There is no reaction with tropæolin.

2. Cases which show clinical evidence of hyperacidity, but in which the phenolphthalein and dimethyl values are normal or even subnormal. The filtrate gives tropæolin values from 4 to 20.

3. Cases in which all three titrations are very high, a not unusual finding in duodenal ulcer.

4. Cases which show no tropæolin reaction and no symptoms of hyperacidity, though both the other indicators give titration considerably higher than normal. A severe case of hyperacidity gave values, tropæolin, 35; dimethyl, 52.5; phenolphthalein, 75. After ten days of treatment in which all symptoms had disappeared, the test meal reading was tropæolin, 0; dimethyl, 44; phenolphthalein, 70. Here there was simultaneous disappearance of symptoms and tropæolin reaction, while the results with the two other indicators were but slightly changed.

Another method of employing tropæolin is in cases of achylia. In these one titrates with decinormal hydrochloric acid instead of the soda until a red colour is obtained, its first appearance being taken as the end point. The hydrochloric acid deficit in cancer of the stomach varies from 40 to 30 per 100, while in benign achylia it is usually under 20.—ADAM PATRICK.

SURGERY.

An Experimental Study of Osteogenesis. By Leo Mayer (*The American Journal of Orthopedic Surgery*, October, 1914).—This article is devoted to the results obtained by the author in research conducted for the purpose of defining the function of the periosteum in osteogenesis.

1. Strips of periosteum were removed from the tibiæ of dogs and transplanted in the thighs. Care was taken not to include flakes of bone. After various intervals the transplants produced osseous growth.

2. In each of six rabbits a portion of rib was subperiosteally resected. The superficial layers of the periosteum were destroyed, and the pleural layers left intact. In all there was callus formation only on the pleural aspect. Osteoblasts were not poured out from the bone.

3. In two animals the twelfth rib was resected entirely, including both epiphyses. The rib was completely regenerated in both cases.

4. Twenty-three experiments were made as follows:—A portion of the upper part of the tibia was denuded of periosteum. On this area a circular gutter was cut with a trephine, and on to this a small cap was fastened, thus isolating the part from periosteal activity. In nine cases, after various periods, no bone grew on the part under the caps, but outside, where the periosteum had play, there was regeneration. In most of the others there were evidences that the periosteum had crept under the edge of the cap.

5. Experiments with living grafts of bone macroscopically without periosteum

were not so conclusive, but the author gathers from them that "bone resected subperiosteally can be transplanted with good hope of success owing to the adherence of periosteal cells to it."—CHARLES BENNETT.

Femur Fractures : Statistics of End-Results. By John B. Walker (*American Journal of Surgery*, December, 1914).—Those who have had opportunities of following up their cases of fracture are convinced that a very large proportion of end-results are not satisfactory.

Too many surgeons, especially those attached to hospitals, are content to base conclusions on the condition of patients at the end of the eight or ten weeks during which they were in active attendance, yet those patients may be disabled in a greater or less degree for several months afterwards, and, in some cases, there may even be permanent partial incapacity.

The author believes that 25 per cent improvement on present conditions will ensue if early and efficient treatment be adopted. Reduction should be carried out at once, and end-to-end apposition secured. Half an inch must be the maximum shortening. General anaesthesia is required in most cases. Traction, sufficiently powerful and in the proper direction, is then to be applied. According to the findings of the British Fracture Committee, where the anatomical result is good, a good functional result may be expected in 90·7 per cent of cases. Radiography should be freely used to control the results of reduction. Great caution must be observed in permitting even partial use of the limb, unless consolidation has been established, lest angulation with consequent functional disability ensue.

If, at the beginning, the surgeon doubts the possibility of a good result from non-operative treatment, then operation should be resorted to at once. The latter procedure must never be left over until other measures have failed.

—CHARLES BENNETT.

DISEASES OF THE EYE.

"Ocular Lesion in Cerebro-Spinal Meningitis" is the title of a short paper by Vinsonneau in the June number of the *Archives d'Ophtalmologie*, and the author calls attention to the occurrence of some of the rarer ocular complications which are liable to be discovered in cases of "spotted fever."

The first of his two cases is one of irido-chorioiditis which seemed to pursue a very rapid course, very quietly, with few inflammatory symptoms, and led to separation of the retina and atrophy of the eye in about ten days. There was never any pain, and when the patient first complained to the surgeon in attendance, he simply stated that he could not see with one eye. This eye (the left), when examined, then showed evidence of subsiding irido-chorioiditis with decrease of the intra-ocular tension, and a shallow anterior chamber.

The general illness was of a subacute character, and the duration was short, as anti-meningococcic serum was injected early.

It is remarked that statistics of various writers on the subject differ greatly as regards the stated frequency of occurrence of this ocular complication of cerebro-spinal meningitis—some giving 5 per cent as the incidence of the symptom, others very much less.

Possibly the reason may be that ideas of the disease irido-chorioiditis may vary to some degree—one, for instance, meaning the suppurative, and another the plastic type only. Otherwise, it is very characteristic of the disease cerebro-spinal meningitis that its complications vary in different epidemics, as in influenza.

The second case is one of acute optic neuritis affecting both eyes. The neuritis was first noted on the seventeenth day of the disease, and, so far as was known, for the parents removed the child from the hospital, resulted in blindness.

The percentage of cases in which optic neuritis is found seems to vary from 10 to 12 per cent.

The writer draws the following conclusions from his observations and study of the literature of the subject:—

1. It is urgently necessary to examine the eyes of the patient frequently in every case of the disease.
2. If ocular lesions are found, lumbar puncture and serum injections should be repeated.
3. It is desirable that all cases should be published in which ocular lesions are discovered.—LESLIE BUCHANAN.

Retinal Asthenopia.—Aubineau publishes a long paper on the subject of retinal asthenopia in the *Archives d'Ophthalmologie* for May, 1914, which is well worth reading.

The type of case which he describes is well known to oculists. Briefly, it is that of an individual whose eyes look well externally, who has his refractive error (if present) well corrected, whose accommodative power is normal, and whose muscular power is normal; but who cannot persist in reading or writing for any length of time without suffering for it.

The nature of the suffering varies in different persons. Some have pain at once, some only after a time. In some the pain is in the eyes, in some in the head, and in others in the neck or back. Some have hysterical globus sensation, and others have sickness. Practically all have more or less general discomfort which sooner or later compels them to cease eye-work and have a rest. A sense of depression is very common. Changes made in the lenses used bring relief for a time, more or less short, then something new must be found and tried.

Frequently the malady runs in families. In short, it is a type of neurasthenia, and is always, according to our author, found in neurasthenic individuals.

Aubineau insists that it is a real clinical entity, and quite distinct from accommodative and muscular asthenopia, and this will be generally admitted.

Unfortunately, our author cannot suggest any new treatment for the condition, and the sufferers, who really suffer very considerably, have to submit to cessation of reading, cultivation of an outdoor life, &c., until they “get over” the trouble in a period which varies greatly.

A long tabular statement of the particulars of the 74 cases, on which the author bases his observations, is included in the paper.—LESLIE BUCHANAN.

X-RAY, &c.

A New Treatment for Chronic Radio-Dermatitis.—Professor Doumer, of Lille (*Archives of the Roentgen Ray*, September, 1914), describes a new treatment for chronic radio-dermatitis. Dr. Doumer states that for the last nine years he has treated chronic radio-dermatitis by the same means which he has found successful in the acute affection. He reports three cases, two of the patients being radiologists. He says, “in all three cases the skin has recovered its normal appearance and suppleness.” The crevices and the excrescences which are so frequently irritated by the clothes, and are often most painful, have entirely disappeared. The telangiectases are in great part obliterated. There is also a notable diminution in the smooth and shining aspect of the skin, which in part has regained the thin wrinkles observed in the healthy integument. The treatment consists in slight prolonged friction with the finger tips on the affected regions with a pomade containing 20 per cent to 30 per cent of lipoic acid mixed with an inert fat, such as olive oil or vaseline, night and morning; also a ten or fifteen minutes’ application of the negative *effluve* from a static machine, the affected parts being first covered with a thin layer of the acid. In the three cases reported great amelioration occurred during the first fortnight.

Lipoic acid is unknown to chemists here under that name, and attempts to communicate with Professor Doumer have so far failed on account of the German occupation of Lille.—JAMES R. RIDDELL.

The Treatment of Recurrences and Metastases from Carcinoma of the Breast. By George E. Pfahler, M.D., Philadelphia, U.S.A. (*Archives of the Roentgen Ray*, November, 1914).—Professor Pfahler reports fifteen cases treated by x-rays, and from them he draws the following conclusions:—

1. The application of the Roentgen rays will at times cause a disappearance of both small and extensive areas of both recurrent and metastatic carcinoma.

2. The disease can at times be made to disappear when it covers the greater portion of the chest.

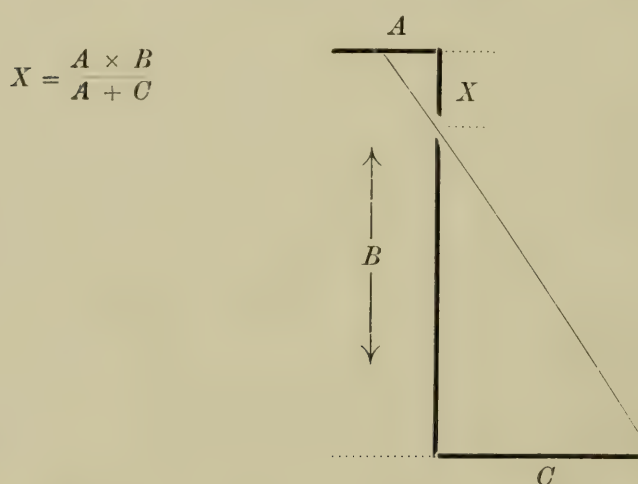
3. In at least one case there seemed to be produced some constitutional condition which led to the rapid disappearance of carcinomatous tissues that had not even been exposed to the rays.

4. The additional administration of thyroid extract in small doses seems to aid materially in the cure of the disease, by maintaining a proper balance of thyroid secretion.

5. The disease should be treated as actively, and with as large doses as circumstances will permit, using every possible means for the protection of the skin.

6. Since the above cases prove that extensive recurrent malignant disease can be made to disappear, the best time to treat with the rays is immediately after operation, when least disease is present. This post-operative treatment should be thorough, and given with the same care that would be used with palpable disease.—JAMES R. RIDDELL.

Localising Simply and Immediately.—Dr. W. Hampson, radiographer to the Queen's Hospital for Children, describes (*Archives of the Roentgen Ray*, November, 1914), under the title "Localising simply and immediately," his method of localisation. The patient is placed on the couch with the tube underneath, and the distance between the upper surface of the body, where the plate is to rest, and the target of the tube is noted. The diaphragm is contracted so that only a small pencil of x-rays issues from the tube box; this is centred directly beneath the foreign body and a mark is made on the patient's skin at this point. The diaphragm is now opened widely. A photographic plate in its dark bag is placed upon the patient, and an exposure made. Without moving the patient or the plate, the tube is moved a certain definite distance parallel to the plate, and a second exposure made. The skiagram will show two images of the foreign body, separated by a greater or less distance according to the depth at which it is situated. Dr. Hampson has prepared a scale on which the depth in any given case can be read off directly. The formula by which it may be calculated in every case is as follows:—Let A represent the distance between the two images on the skiagram; let B represent the distance from the plate to the target of the tube; let C represent the



distance through which the tube is moved between making the two exposures; and let X equal the depth from the skin at which the foreign body is lying; then A multiplied by B upon A added to C is equal to X .

It is to be noted that the foreign body lies vertically inwards from the mark that is made on the patient's skin.—JAMES R. RIDDELL.

A Simple and Rapid Method of Localising Bullets.—Dr. Francis Hernaman-Johnson, Medical Officer in charge of X-ray and Electrical Department, Cambridge Hospital, Aldershot, describes (*Archives of the Roentgen Ray*, December, 1914) a simple and rapid method of localising bullets. It requires no special apparatus. With the patient lying on the couch, and a narrow diaphragm, the tube is brought vertically beneath the foreign body. A ring localiser ("this consists of a metal ring, having an internal diameter of about two-thirds of an inch, fixed to the end of a flat wooden handle one foot long") is slipped in beneath the screen, and moved about until its shadow encircles that of the foreign body, and a mark is made on the skin in the centre

of the ring. Next, the ring localiser is now slipped beneath the patient, and moved about until the foreign body is again encircled by the ring, and a second mark made on the skin on the lower aspect. This skin mark will be vertically below the first one. The patient is now turned on his side, and the process repeated. We can then judge from these four points the exact position. Dr. Johnson says that by inspection of these marks one is enabled to judge within half an inch of the position of the foreign body. He says, "Although the procedure described depends entirely on screen examination, it is not dangerous to the operator. The small field makes it unnecessary for him to expose his eyes to a direct *x*-ray beam, and the handle of the 'ring-localiser' does away with all risk to the fingers."—JAMES R. RIDDELL.

A Radioscopic Compressor Diaphragm Based on the Bucky Effect.—One of the principal causes of fogging and blurring in the *x*-ray negative is due to secondary rays which are generated in the body by the passage of the primary *x*-ray beam through it. To cut off these secondary rays Dr. Bucky (*Archives of the Roentgen Ray*, September, 1914), has designed a *grid diaphragm*. It is constructed of thin strips of metal; these are arranged at right angles to each other, so that we have a series of square holes. The whole grid may measure 10 or 12 inches square. Each square hole measures about 2 cm., and the depth is 5 cm. The metal strips forming the walls of the apertures converge to a certain predetermined point, and it is essential when using the grid to place it at such a distance from the tube that these converging sides would meet at the anti-cathode. This grid is placed between the part to be photographed and the plate or screen, so that the secondary rays which arise from the body under examination are absorbed by the walls of the apertures while the primary rays coming from the tube pass through. The result is that the negative is freed from the fogging due to the secondary rays. When the grid is accurately adjusted it is represented on the radiogram by fine lines.

In the August number of the *Archives*, Dr. Holzknecht, of Vienna, has described a radioscopic compressor diaphragm based on the Bucky effect, especially for fluoroscopy. It consists of a simple narrow cylindrical tube perhaps 1½ inch long and 3 or 4 inches in diameter. It is attached to the fluorescent screen and interposed between the patient and the screen; it can thus be moved about and brought over each part that is to be examined. The part within the circle is by this means illumined by the primary *x*-ray beam only, and it is therefore very clear.—JAMES R. RIDDELL.

Books, Pamphlets, &c., Received.

- The Transactions of the Edinburgh Obstetrical Society. Vol. XXXIX. Session 1913-14. Edinburgh: Oliver & Boyd. 1914.
- Elements of Pharmacy, Materia Medica, and Therapeutics, by Sir William Whitla, M.A., M.D., LL.D. Tenth edition, forty-second thousand. London: Baillière, Tindall & Cox. 1915. (9s. net.)
- A Synopsis of the British Pharmacopœia, 1914, and of the Poison Law of Great Britain and Ireland, by H. Wippel Gadd, F.C.S. Eighth edition. London: Baillière, Tindall & Cox. 1915. (1s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDED 20TH FEBRUARY, 1915.

	WEEK ENDING			
	Jan. 30.	Feb. 6.	Feb. 13.	Feb. 20.
Mean temperature, . . .	34·1°	42·8°	37·8°	40·1°
Mean range of temperature between highest and lowest,	11·2°	9·7°	6·3°	7·8°
Number of days on which rain fell,	0	7	7	5
Amount of rainfall, . ins.	0·00	1·03	0·84	0·57
Deaths (corrected), . . .	428	454	429	443
Death-rates,	22·2	23·6	22·3	22·8
Zymotic death-rates, . . .	2·8	3·2	2·5	3·4
Pulmonary death-rates, . .	1·5	1·0	1·6	1·8
DEATHS—				
Under 1 year,	82	98	77	97
60 years and upwards, . .	126	114	107	112
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	...	1	1	6
Scarlet fever,	6	9	4	4
Diphtheria,	3	4	2	4
Whooping-cough,	45	47	42	50
Enteric fever,	3	1	1	1
Cerebro-spinal fever, . . .	...	...	1	1
Diarrhœa (under 2 years of age),	8	8	5	3
Bronchitis, pneumonia, and pleurisy,	119	132	113	102
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Cerebro-spinal meningitis, .	4	2	1	3
Diphtheria and membranous croup,	38	33	23	35
Erysipelas,	29	28	27	19
Scarlet fever,	103	131	132	89
Typhus fever, . . . . .	...	...	...	...
Enteric fever,	7	10	5	6
Phthisis,	69	77	64	93
Puerperal fever,	4	4	5	2
Measles,*	23	51	77	82

* Measles not notifiable.

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ORIGINAL ARTICLES.

LACERATIONS OF THE MATERNAL TISSUES
DURING LABOUR.*

BY J. NIGEL STARK, M.D., F.R.F.P.S.G.,
Surgeon to the Royal Samaritan Hospital for Women, Glasgow.

GENTLEMEN,—In fulfilling my engagement to deliver an address to you, I have found some difficulty in selecting a suitable subject. It had necessarily to be in the domains of diseases of women or obstetrics, and my chief daily work in gynæcological surgery being ruled out as too specialised, I ultimately decided upon "Lacerations of the Maternal Tissues during Labour" as a subject which would almost certainly be often under your own consideration and so would interest you. True, it may seem to be rather commonplace and too familiar, but I hope to prove to you that there still remains great need for further study of the means of prevention and treatment of these injuries, more especially with regard to their prevention.

Those engaged in medical practice in industrial centres such as this know well how many women suffer discomfort and misery as the direct result of child-bearing—in the performance

* Read at a meeting of the Monklands Medical Society, Coatbridge, December, 1914.

of what ought to be a normal physiological action. These ill effects can scarcely be realised by any one practitioner, but the wards of a gynæcological hospital reveal them in all their severity, and one becomes disheartened and distressed by the never-ending procession of women suffering from prolapse of the vaginal walls, prolapse of the uterus, tears of the perineum, want of rectal control, subinvolution of the uterus with lacerated cervixes, and other lamentable maladies. There is no trace of exaggeration in what I say, although we occasionally meet sceptical practitioners—more frequently we did so some years ago than we do nowadays—who assure us that they never see badly torn perineums nor encounter any evil results from ordinary child-bearing. While it is true that practitioners of more leisurely days whose women patients were more patient and resigned to their childbed sufferings than are those of to-day actually did have fewer cases of lacerations, yet it must also be remembered that these were generally missed in the bad old times of secretive parturition conducted in a darkened room and under the screen of the bedclothes. They have been brought to light by more enlightened methods in the conduct of labour, and gynæcological hospitals have exposed their secondary results. I do not intend to inflict statistical figures upon you, but shall merely say that on an average I operate annually upon 150 cases of perineal and vaginal injuries and have done so for several years. Large numbers of cervical injuries also require treatment, but I have no definite figures for them. During the last twelve months I operated upon 570 patients, and almost exactly a fourth of these (162) required “repair” operations.

It may be well, first of all, to discuss, briefly, injuries to the uterus during parturition, and thus leave the way clear for our study of the more frequent lacerations of the pelvic floor. Generally speaking, rupture of the uterus ought never to happen, and it is usually, but not always, to be regarded as a reproach to a practitioner. The only instances of this terrible injury which I have seen have been in cases of placenta prævia. The lower segment of the uterus is then, naturally, weakened by the placental implantation, and manipulations, as in version of the child, ought to be conducted with extreme carefulness and only after complete dilatation of the cervical

canal. In passing, I would say that I do not consider it wise for the general practitioner to use dilating bags or metal dilators in treating placenta prævia. In spite of all objections, practical and theoretical, I advise plugging the cervix and vagina firmly and thoroughly with gauze, and leaving it until the cervix becomes dilated. If bleeding is serious and the cervix will not dilate, the soundest form of treatment is, I am convinced, Cæsarean section. This conviction, I must admit, is only from the small personal experience of one case upon which I operated, but the success was very striking.

Twice, in cases of placenta prævia, I have seen the uterus ruptured by manipulations through an imperfectly dilated cervix, in one instance the patient not having been even thoroughly anæsthetised. Strong uterine and abdominal wall contractions set up by the introduction of the hand or forceps compelled the practitioner to put forth even more force than he was justified in doing. Both of the patients died, and both cases were from several points of view exceedingly sad and regrettable. The only method of treatment of uterine rupture is to deliver the child and placenta as quickly as possible, pull down the cervix with a vulsellum and pack gauze into the tear. Laparotomy, during the profound shock which obtains at the time, is too dangerous to be attempted, unless very exceptionally.

Lacerations of the cervix, if more than slight in extent and depth, are usually but not always caused by delivery with forceps or by turning through an incompletely dilated cervical canal. Generally, there is only greater hæmorrhage than usual to draw attention to the laceration. Therefore, if post-partum bleeding is severe and the uterus is well contracted the cervix ought to be examined, very gently pulled upon, and stitched with catgut. It is not wise to stitch even a badly lacerated cervix immediately after labour unless there is serious bleeding, as the œdematous, friable tissues do not tend to heal well. The prophylaxis of cervical tears is almost the same as that of lacerations of the pelvic floor, and the whole subject is so large that it is not easy to select its most vital aspects, or to decide how best to begin its discussion. If I had sufficient time I would speak at length, as I had originally intended, on what we are all too apt to forget after

even a few years spent in busy practice, and would direct your attention to a consideration of the anatomy of the soft parts in the pelvis, the pelvic floor, and the perineum. I can only ask you, however, to revise your knowledge of these subjects. Unless you have a good working idea of the pelvic fascia and of the levator ani muscle, the principles which ought to guide your prophylaxis and treatment of perineal lacerations must be faulty.

The conditions which tend to produce perineal lacerations may exist in the powers, the passages, or the passenger, singly or in combination.

The powers may be too strong and, although not frequently, most of us must have occasionally seen examples of "pains" so violent that the child has been born before full dilatation of the soft parts has occurred, with resulting laceration of the mother's tissues. A more common condition is uterine inertia, either alone or associated with pendulous abdominal wall, and the feebleness or misdirection of the expulsive powers leads to the premature application of the forceps and consequent laceration.

The bony passages may be at fault, either at the brim, and so tempting the practitioner to the violent use of forceps, or at the outlet, thus necessitating a special dilatation of the perineum before the head can round the symphysis pubis. The soft passages, on the other hand, may be unduly soft or unduly rigid.

On the part of the passenger there may be as causes of delay tending ultimately to lacerations, a large head, especially if much ossified and incompletely moulded, occipito-posterior positions, large shoulders, and many other well-known conditions. Acting adversely along with them, we have too often to reckon upon the "conductor" in too rapidly extracting the unmoulded head or in otherwise acting in opposition to natural laws.

In considering, first of all, the bony passages as factors in the production of tears of the maternal parts, it seems to me necessary to say that men engaged in obstetric work ought to familiarise themselves in the taking of pelvic measurements. From what I have seen and heard I am afraid that very few examine their prospective primiparous patients before the onset

of their labour, or have in any particular case the remotest idea of the diameters of the pelvis through which the child must pass. The fact is that while all other branches of medical practice are changing almost daily we must admit that use and wont and tradition still play unduly prominent parts in obstetrics. The knowledge that in normal women child-bearing is or ought to be a normal physiological process, and that departure from the normal ought to be comparatively rare, has given rise to a general idea among the laity as well as in our profession, that there is no special need of any preliminary study of the parturient woman, and that whatever may be learned from the behaviour of a first case hardly ever renders it advisable to interfere in a subsequent pregnancy before the onset of labour.

Now, I venture to say that this is altogether a false and hopelessly out of date manner of regarding obstetric work. No one would dream of performing a major surgical operation without a careful preliminary study both of the patient and of the methods necessary for a successful result. But a man lightly engaged to attend a woman during her confinement and proceeds at once to dismiss her from his thoughts until he is summoned to her after the onset of labour pains. We must all admit that this is no overdrawn story of what occurs daily, and of what all of us have been guilty. It will be a very long time before any of our Utopian dreams are realised, when every expectant mother will be properly and scientifically supervised in order that difficulties, dangers, complications may be foreseen and guarded against or at times be prevented; but meanwhile, before the dawn of these enlightened days, it is surely possible for us to recognise that at least one simple duty is to make a pelvic examination about two months before full time of some of our expectant patients of whom we are suspicious. I know that many men seem to find this a difficult procedure, but after a little practice—and nothing worth possessing can be got without patience and perseverance—the difficulties largely vanish.

While I must remember that this is not a paper on abnormal pelves, and that I refer to them only in so far as they may be the causes of difficult labour, and consequent tears of the maternal tissues, yet, as I am pleading for recognition

of the condition prior to the onset of labour, it is within the limits of my thesis to say that it is not a matter of insuperable difficulty for any practitioner to determine whether or not a pelvis is of sufficient capacity to allow an average-sized child to pass without danger to it or to the mother. The diagnosis may be made, first of all, from examination of the body and abdomen—that is to say, from external examination, and in many cases this may be sufficient. The probability of some deformity may be surmised from the appearance of the patient or from her history. When rickets is the determining cause—(1) there are deformities of the bones of the legs, a prominent forehead, ill-developed teeth; (2) the abdomen is pendulous, for, of course, the uterus can only grow freely in a forward direction, and during the last weeks of pregnancy the child rests actually not on the pelvic bones but upon the abdominal wall; (3) the abnormality may be visible, the pelvis appearing twisted as the patient lies in bed; and (4) there may be a peculiar shape of the uterus due to malpresentations of the child predisposed to by the contracted pelvis. These four signs are easily recognised; they are readily borne in remembrance, and, if noted singly or together, ought to lead us to take all necessary steps to further a safe delivery to mother and child. In the case of a woman who has borne children a history of increasingly difficult labours should make us suspect the presence of a minor degree of contracted pelvis. The first birth may or may not have been terminated by forceps, and, instead of subsequent confinements becoming easier, they grow more and more difficult. A woman whose pelvis is normal nearly always has easier confinements as time goes on. There are, of course, reasons for the progressive difficulty in the flat pelvis, and these are that while the foetal head normally tends to become larger and the bones more ossified with each successive pregnancy, the uterus loses its elasticity and its expulsive force is diminished. When along with this the belly wall becomes more pendulous, its muscles weaker, and their force misdirected on an abnormally anteflexed uterus, we can easily recognise that there is a growing inability on the part of both the voluntary and involuntary forces to get the child's head born. When we have a patient with such a history we ought in the early months of pregnancy to foresee, and subsequently adopt, means to

prevent the evil effects of a tedious and ineffective struggle, followed probably by unduly forcible use of forceps.

I had intended to enter upon a discussion of the best methods of measuring the pelvic diameters by the fingers and by a pelvimeter, but find that it would lead us too far from our original path. What I have said or have not said leads, however, to the conclusion that, if we make a routine practice of examining parturient women before the onset of labour, we shall soon be able to determine whether or not we require to make provision for their future. If every obstetrician did so, a great step would be made in the right direction.

Further, if we do recognise, by internal and external examination and by measurements, that the pelvis is contracted, that in a primipara the presenting part, if it is the head, has not descended into the brim as it should have done from four to six weeks before full term, then we ought to be prepared to induce labour, or to have some such operation as Cæsarean section performed. It has always been a mystery to me why practitioners so seldom attempt the induction of labour before term. I have known of women having, birth after birth, a terrible ordeal to undergo, and of their doctors being harassed and exhausted by the strain of hard forceps cases. Personally, I abhor and detest tugging and hauling with forceps as, I have no doubt, all practitioners do. And in spite of the fact that thousands of children have been born alive under these conditions, I believe that high forceps operations ought to be abolished altogether, as being too dangerous for the mother, and not worth all the hard work entailed. I am of the opinion that if the true conjugate at the brim is from about 3 to $3\frac{1}{2}$ inches labour ought to be induced by passing, with due antiseptic precautions, two to four bougies within the uterus, not, however, before the thirtieth week. It is usually a very simple little operation, and is so satisfactory that when once tried there will be no hesitation in having it repeated when necessary. A few months ago I saw a lady during her third pregnancy. At her first labour she had been attended by one of the best-known accoucheurs in Glasgow, and the experience had been trying to all concerned. The child's arm is not properly developed to this day, and I was told that the doctor was terribly knocked up and exhausted by his exertions. I performed,

later on, repair of the tissues, but, at a second confinement, which was less severe because the child was a female and smaller than the first, they again gave way. A second repair was followed by a third pregnancy, and during its progress the family doctor sent the patient to me from the country. I unhesitatingly recommended induction, and this was done in a nursing home with eminently satisfactory results, and the perineum required no further treatment. The patient was preserved from the horrors of a long, tedious labour, followed by dragging upon the child, tearing of the parts, and nerve exhaustion.

Another point worthy of the practitioner's serious consideration is whether, if he has been summoned to a patient not previously examined, and whose pelvis is found to be too small or the child's head too large to permit, in either case, normal birth to take place, it is not wiser and kinder to perforate at once if sufficient, but not excessive, tractive force has been applied unsuccessfully. I have been asked to assist a practitioner, who with a friend had been pulling with might and main in an endeavour to extract a child whose heart had actually ceased to beat. The result on the maternal tissues is usually disastrous when such heroic efforts are made. Our primary duty, after all, is to safeguard the mother's life and health, not to extract a child by brute force—a child either killed by the forceps or seriously damaged in some manner. It may be, and often is, impossible for the mother to bear more children after such an experience, and so it is that the sacrifice of one child in labour may, in the long run, actually result in a gain of others. A woman who has not been badly injured by a labour is always an asset for the production of more children.

The damage done by high forceps operations, more especially when the cervix is not fully dilated, is brought before me every day. For example, I was asked a few weeks ago to see a case of vesico-vaginal fistula. I took with me speculum and probes, as these fistulæ are frequently high up in the vagina, small and difficult to see; but they were not needed, as, when making a vaginal examination first of all, I found that my fore and middle fingers passed straight into the bladder. This had come from treatment such as I have described. There had been no ante-partum examination of the primiparous patient,

and the pelvis being markedly rachitic, there duly followed a series of hauls and pulls by two strong men acting in turns, and, all in natural sequence, a perineum torn to the rectum and a hole into the bladder of the size of a half-crown. The story has ended more happily than I had dared to anticipate, my rather pessimistic prognosis not having been fulfilled. The fistula healed after my first operation. The patient's doctor, with whom I discussed the case, and who is well educated and much respected, told me that nearly all the women in the Eastern district of Glasgow in which he practises have some abnormality of the pelvis caused by rickets. This disease, which is so prevalent in Glasgow and in most industrial centres in the west of Scotland, is a scandal to us as a community. It is preventable, and ought to be prevented. As medical men we must endeavour to guard the period of infancy when the fatal carelessness and neglect provide the diseased spines and flat pelvises of the future mothers. I must confess that the apathy with which rickets is regarded in some sections of our community appals me, and it often seems to me that such wholesale physical deterioration as is presented daily to our gaze, due to poverty, squalor, ignorance and intemperance, can never be dealt with only by medical science and sanitation. Wholesale reforms are needed, and it is inconceivable that a nation which can bear the expenses of this war will hesitate to spend freely in the interests of its people's health and happiness. Let us hope that with the spread of a more liberal education, drastic measures of social reform, a more enlightened land policy, and a more sensitive public conscience, such a disease as rickets will be ultimately unknown. Meanwhile, however, while safeguarding by our private precepts and by any public influence which we possess the interests of the future generation, it is our immediate duty to treat the unfortunate rickety parturients of to-day in the wisest manner possible.

In all classes of society we meet the justo-minor or generally contracted pelvis, and, when we do, a very important question comes up for solution in each case. Often all that is wanted to allow of a normal birth is time, so that moulding of the head may occur, as regards the child, and slow, thorough dilatation of the soft parts, as regards the mother. This subject could be discussed almost *ad infinitum* and from many viewpoints,

such as the length of time that it is safe for a woman to continue in the second stage of labour, and the best means of dilating the parts. We may consider them briefly later on. Perhaps equally important practically is the question of the fee to be received for our work. It must be conceded at once that it is impossible for the general practitioner, engaged in constant visiting, to give the care and attention to a tedious case which he ought to do. The intelligence or want of that commodity in the patient, friends, and nurse is also an important factor in the conduct of a tedious labour where only time is required to ensure a safe delivery.

Turning now to the powers, involuntary and voluntary, as factors in the causation of lacerations, we find that there may be abnormally strong or unduly feeble "pains." Let us revise our memories of the two opposing forces present during labour which are brought into action. These are the expulsive forces in the uterus and the abdominal muscles and the resisting forces in and around the vagina and perineum. A see-saw movement goes on until the stronger expulsive gradually weaken and stretch the weaker resisting forces, which ultimately yield and then, in a normal case, all goes well, and the child is born without causing injury.

An actual excess of force in the expulsive powers is very rare, although a relative excess is not uncommon. Sometimes a small child in an abnormally roomy pelvis may be fairly shot into the world, with the result that the maternal tissues are severely lacerated. Unfortunately, we are rarely at hand to prevent this accident, but if we are we must endeavour to retard the child's progress by pressing against the too rapidly advancing presenting part.

The much more common feebleness of the pains, usually known as inertia of the uterus, is often seen in primiparæ among our better class patients. Their labours are often prolonged in the first stage, they become emotional, nervous, and impatient for us to "do something." There is no real obstruction to the progress of the child. In too many of these cases forceps are used in response to the entreaties of the patient and her friends, with resulting damage to the mother's soft tissues. Far safer and more satisfactory treatment is to get the rectum and bladder well emptied and then to

administer, in the earlier stage, a hypodermic injection of hyoscine and morphine. This allays the pain of the often irregular and useless uterine contractions, induces sleep which refreshes the patient, and relaxes a rigid cervix. It is such a boon and, when judiciously used, saves so many weary hours of fruitless pains, that I am surprised that it is not more frequently given. Of course, opium was given many years ago in labour, and its use was advocated by Sir James Simpson for rigidity of the cervix, but it had somehow fallen largely into disuse. In the form of its alkaloid, morphine, combined with hyoscine (scopolamine), its use has been revived as a relaxant and an analgesic. By its action the premature application of forceps through an imperfectly dilated os may be avoided, with consequent prevention of lacerations.

In the second stage, when other conditions are normal but the pains are feeble and fail to advance the child, brilliant results have been obtained by the administration hypodermically of pituitary extract. Its use should be restricted to cases in which the presenting part is in a normal position and well engaged and the cervix is fully dilated or readily dilatable. In a recent paper the assistant masters of the Rotunda Hospital, Drs. Madill and Allan, speak most favourably of it. Of 120 patients who got the drug during the second stage, 87 were primiparæ and had, on an average, been seventeen hours in labour. The average time elapsing from injection till the birth of the child was thirty-two minutes. Of 33 multiparæ the average time was eleven minutes. They also tell us that 147 cases were treated in a certain time by pituitary extract, in the vast majority of which forceps would certainly have been applied. Their conclusions are that pituitary extract undoubtedly increases the strength of the uterine contractions, which maintain their physiological character, and that the best results are obtained when given during the second stage. It is quite safe for the mother, and the course of the puerperium is normal. What, however, concerns us chiefly at present is that its use reduces the number of forceps operations, with consequent lessening of the numbers of lacerations and of puerperal morbidity.

It would be too lengthy a proceeding to discuss the use and abuse of midwifery forceps in relation to pelvic floor lacerations,

but you can gather from what I have said that my opinion is that the seldomer they are used the better it is for parturient women. They ought to be considered surgical instruments, and the indications for their use should be very clear, much clearer than is usually believed. Schauta, a man of unique experience, in his latest utterance, the fruit of his ripe knowledge, says, in discussing the many complicated problems of contracted pelvis, that "spontaneous birth affords by far its best solution. The objection might naturally be made that spontaneous birth is not always possible. That is, unfortunately, quite correct. But spontaneous birth is far more frequently possible than it appears from statistics. By premature interference with its natural course, many cases of labour are directed into a wrong course and result in great injury to mother and child." Let me ask you to bear these words in continual remembrance. Schauta then says that 80 per cent of the births at his clinique, with narrow pelves, occur spontaneously, only full-time births being taken into account. I again quote his words, "The question forces itself upon us, Does the expectant treatment not cause injury both to the mother and the child—to the former on account of long duration of labour causing contusion to the soft parts, to the latter also from undue compression during birth? These consequences do not occur. Of all the possible methods of treatment of labour in contracted pelvis, the expectant treatment gives by far the best results for the mother as regards both mortality and morbidity, and we consider the puerperium disturbed if once the temperature has risen to 100.4°F . Regarding the child we have also obtained the best results from spontaneous birth in preference to all other methods of treatment, with the exception of Cæsarean section." It has been found that practically at $3\frac{1}{2}$ inches for flat and $3\frac{1}{4}$ inches for generally contracted pelves spontaneous delivery can occur if the foetal head is not unduly large or unduly ossified.

As regards the length of time which one can safely wait in a protracted first stage due to inertia, my opinion is that interference then is practically never necessary. Sometimes it is said and believed that premature rupture of the membranes is an indication for the use of the forceps in the interests of either the mother or the child or of both, but my experience has

taught me that all of us, lay and medical alike, tend nowadays to exaggerate the danger. I have never seen a woman die of exhaustion, and we ought not to allow ourselves to be influenced by the anxiety of the patient for a speedy delivery, nor by the remarks and suggestions of anxious friends and relatives.

In the second stage, also, the dangers due to a slow delivery are not nearly so great as usually imagined, and I am certain that if we give time for the pelvic floor to become gradually distended by the presenting part we avoid many cervical, vaginal, and perineal lacerations which are responsible for so many of the ailments which follow parturition, and run very few risks from the protraction of the labour even in the second stage.

I originally intended to speak at some length on the subject of the soft parts of the pelvis and, consequently, of the anatomy of the pelvic floor, but find that time will not permit me to do so. One thing is certain, as I have already said, that unless you have a good, clear idea of the pelvic fascia and of the levator ani muscle your conception and treatment of perineal lacerations will be faulty. The tissues involved may include the skin from the anal orifice to the posterior vulvar commissure, the mucous membrane of the vulva, vagina, and rectum, the cellular tissue, and the sphincter and levator ani muscles. The reason why some women have a complete tear into the rectum and yet do not suffer subsequently from prolapse is found in the fact that while the sphincter muscle is torn the levatores ani are left to functionate properly. They remain enclosed in their intact sheaths and get their points of resistance from the portions which remain inserted in the *medium raphé*. On the other hand, the symptoms associated with partial rupture of the perineum are caused by the tearing away of the levatores ani from their insertion. Very frequently I see a case of vaginal prolapse causing great discomfort associated with an apparently normal perineum. Either the muscles had been torn away, leaving the skin and superficial tissue intact, or there had been also a tear of skin which alone had been stitched, resulting in either case in a loss of support to the lower part of the rectum with the formation of what is known as a *rectocele*.

The prolapse of the anterior vaginal wall, the *cystocele*, which is also very frequently seen, is caused by a different kind of

injury. In order to understand it we must think of the pelvic floor as divided into two segments by a line drawn through the axis of the vagina and uterus. There are thus an anterior or pubic section and a posterior or sacral section, which overlap each other at their free borders like two folding doors, as Hart and Barbour aptly described it, the anterior opening upwards and the posterior downwards. In a normal parturition the anterior segment or front door opens inwards and upwards before the advancing head, carrying the bladder and anterior vaginal wall above the symphysis. Now, let it be remembered that all the ligaments of the bladder except the urachus are inserted into the base or under surface, which is fixed so that the bladder is, as it were, suspended in a sling. Its base is intimately associated with the fibrous vagina, and is attached above to the uterus and below to the os and symphysis pubis. If we bear these anatomical points in mind we understand what happens to the bladder in uterine prolapse, and why in complete rupture of the perineum the bladder and uterus as a rule remain in normal position. We can also understand that when a "pain" comes and the uterus tries to empty itself, the uterine muscles tend to draw together the two extremities of the organ, and so necessarily lift up the cervix with the bladder and vagina attached to it. If, however, we carelessly or roughly drag upon the child with forceps before the cervix has dilated sufficiently to permit the uterine contractions to open the door properly or, rather, to pull up the anterior segment, then it may be forcibly pushed down in the wrong direction. The anterior lip of the cervix with the bladder and anterior vaginal wall, having been driven down under the symphysis pubis, is caught there. In this position the base of the bladder becomes unduly stretched, the tissues between it and the vagina give way with loss of its support, and a cystocele shows itself soon after parturition. This injury is all the more likely to occur if the bladder has been distended with urine before instrumental delivery has been effected. Later on, if involution of the pelvic organs is not good, as it often is not after injury, the condition of the prolapse of the bladder becomes still more aggravated. These cases are extraordinarily common, and hardly a week passes during which I do not operate on their account. The prophylaxis is

plain. The cervix must always be ready for the passage of the head before it gets through, whether naturally or artificially, and the bladder must be kept empty. Later on, subinvolution must be prevented.

It is not necessary to speak of the importance of the prevention of perineal lacerations in normal births. I do not think that any "support" is of value, but the Rotunda method of "saving" the perineum is rational. It consists in pressing the foetal head against the pubis, so as to help the levator ani to push forward and extend the head. We know that when the occiput is under the pubic arch the head is forced on and extended by the levator ani, and so by our pressure we can resist a sudden advance, and thus aid in saving the suddenly stretched muscle. In addition to this manœuvre, I believe, especially in the case of elderly primiparæ, in a preliminary digital stretching of the vagina. This should be done under anæsthesia, and should really consist of massage in a rotating fashion, and backward and lateral stretching. Usually it will, if maintained for about twenty minutes, enlarge the most rigid perineum. Hot applications also help greatly in softening the parts.

Finally, let me say a few words on the methods of repair in perineal tears. First of all, however, it is absolutely necessary to see them, and we can, single-handed, have a satisfactory view of them in the great majority of cases by putting the patient on her left side, passing our left arm between her legs from before backwards, and with three or four fingers in the vagina keeping forward the anterior wall. Often there are deep tears at the sides of the vagina separated by a tongue-shaped bit of mucous membrane which is a part of the posterior vaginal wall. These tears can easily be seen before delivery of the placenta, and we ought to be ready to perform their repair as soon as it is delivered. I always, if possible, stitch with the patient across the bed, and in the lithotomy position, but I quite realise that while it is easy to do so in a house with every convenience, and the assistance of a trained nurse, or in a nursing home, it is almost impossible under less favourable conditions, and it is therefore usually necessary to have the patient in the left lateral position. If I may enter into detail I would say: have all the instruments ready and at hand. Put a piece of gauze in the

vagina above the field of operation, so as to give a clean view, and remove this gauze after the suturing is finished. The whole secret of success in the operation is found in using a large needle, with almost a semi-circular curve; in beginning at the posterior end of the wound, in taking up a large quantity of tissue in each stitch, and in picking up the separated tongue-shaped piece of the vagina bit by bit as we go on, until its apex or lowest portion is stitched to the anterior end of the skin wound. This necessarily restores the perineal body perfectly. But in practice the great difficulty consists in securing the deeper tissues—the divided ends of the muscle and pelvic fascia which had retracted at once whenever the tear had occurred. It is useless to sew up the perineum without taking in the muscles. That is the most important point to remember.

Stitches ought to be about half an inch apart, and silkworm-gut should be used. They are best left long, as when short they prick the skin like needles. Tie them together at their free ends and wrap a piece of gauze round them. It is a mistake to tie them very tightly or to put in too many. Sometimes patients tell me that they had eight or ten after their baby was born, but it must be remembered that healing does not depend upon the tight apposition of a wound nor upon a large number of stitches. As a rule, three or four are sufficient. No after-douching is necessary or even advisable. In ten days the stitches should be taken out, and this is easily done if they have been left long. It may be added that while it is wisest, as a rule, to operate at once, yet we can get perfectly good results if we wait up to twelve hours. Under certain conditions, easily recognised by all of us, the chances of success may be increased by a little delay. I need hardly say to you how important is the employment of a careful antiseptic and aseptic technique, and how easily it can be carried out in the poorest home. Without it nothing but failure and danger result, but with reasonable care success ought to follow all immediate operations, and, as a gynæcological surgeon, who has operated on many hundreds of women on account of pelvic floor lacerations, I say most unhesitatingly that these secondary operations, whether on the perineum, on the ligaments of the uterus, or on the uterus itself, are all unsatisfactory substitutes for careful, accurate, aseptic repairs of

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injuries at the time of birth. Best of all, of course, is their prevention.

But this long paper must be brought to a conclusion, although the subject has not been treated exhaustively. I shall sum up briefly some of the points which I wish to emphasise.

1. The pregnant woman deserves much more care and attention than she usually gets. Everything ought to be done to help women who are fulfilling their natural destiny, and who ought to be more highly honoured than women doing any other work. Motherhood should be regarded with honour, and we ought to do all we can to prevent the dangers and fears of women at the time of their travail. To many modern women child-bearing means more than it did to their mothers, but, more especially at a time of national danger such as this, all must realise that a steady supply of healthy children is imperative if our country is to maintain its high position and fulfil its noble destiny. For national and personal reasons, therefore, motherhood should be honoured, and child-bearing be rendered as safe and easy as it can ever be. Pain adds to the joy, but unnecessary pain ought not to be permitted.

2. The primagravida ought to be examined two months before full time is expected, in order that the accoucheur may gain some knowledge of the size and form of her pelvis.

3. If the pelvis is found to be abnormally small or contracted, measures ought to be adopted so as to obviate the use of forceps above the brim.

4. When there has been exceptional trouble at a first confinement due to a small pelvis, unusually large child, or other like cause, then induction of premature labour in a future pregnancy is worth consideration, as an operation well adapted for performance by the general practitioner.

5. Forceps ought not to be applied above the brim of the pelvis. If the pelvis is contracted and the head cannot engage, Cæsarean section or craniotomy should be performed at an early, not a late, stage of the labour. Excessive force is wrong and should never be employed, even if it may often seem successful. It seems to be a point of honour with some men that they get a child born in some fashion, either by forceps or turning, even if they are dragging upon a dead child. That frame of mind should be discouraged and the conduct abandoned.

6. In moderate degrees of contracted pelvis spontaneous delivery is safest for both mother and child.

7. In uterine inertia, pituitary extract is of value in the second stage.

8. Too early recourse to the use of forceps is to be discouraged. It should be a fixed and unalterable rule not to operate through an undilated cervix. There is an undue tendency to exaggerate the dangers attendant upon prolonged labour. They are really not great, and the vast majority of women, if left to themselves, can deliver themselves naturally. Usually a hurried artificial delivery is a source of much more serious evils.

9. Lacerations of the perineum and vagina ought to be attended to in every case, and as soon as possible.

Every man engaged in general practice should regard midwifery as his specialty. He can obtain help and advice in many other branches of his work, but he has to rely upon himself, and often under disadvantageous conditions, many times in his obstetric work. It, therefore, ought to be taken seriously, for it is to the general practitioner that we must look for the prevention of much of the disease and discomfort which afflict so many women in their best years, which are so precious to the family and the State.

Gentlemen, I thank you for inviting me to be with you this evening, and assure you I appreciate the privilege of taking part in your proceedings. I am glad that medical work, which has in the past been almost purely individualistic in its social and professional aspects, is becoming more friendly and brotherly socially, and public-spirited professionally. The value of a society such as yours consists largely in drawing its members into friendly relationships, and in leading each to submit his own fragment of thought or experience for examination and criticism. By so doing, some addition is always being made to your knowledge of the best means of preventing or alleviating human suffering.

CHOREA.

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THE nomenclature of disease carries with it, in not a few instances, traces of the traditional conceptions associated with its origin and treatment. The emancipation of the human mind from the bondage of mediæval superstition has suppressed, probably for ever, the epidemics of dancing mania which periodically visited different parts of Central Europe in the Middle Ages. These expressions of emotional disturbance, characterised by the most exaggerated caricatures of human movement and conduct, bear only a very remote resemblance to what are now recognised as the characteristics of St. Vitus' dance, but it may still be a problem of no less scientific importance than historic interest to enquire whether the motor agitations now known as chorea have not something in common with the more violent disturbances associated with the name of the patron saint of the German Church. The epidemics of dancing mania flourished in an atmosphere of religious emotion, the horizon of which was limited by ignorance and by fixed ideas. The victims of obsessions, the people danced for hours in the streets and churches till they fell down exhausted. The epidemic of 1374 spread in a few months from Aix-la-Chapelle to Cologne and into the Netherlands. In its contagious character it presented the outstanding features of a miasmatic plague; the clergy of the time attributed it to demoniacal possession; modern psychology might describe and explain the phenomena in different terms without modifying in any degree the meaning of the interpretation then given; the dancing mania was an hysterical motor agitation, psychic in origin, and provoked in an ignorant people by fixed ideas.

While these manias provide the outstanding historical examples of the influence of mind in producing a disorder of

locomotion and conduct in large masses of people, old and young, male and female, the story of the Crusades affords equally striking evidence of the dominating influence of fixed ideas on the conduct of large masses of people whose lot in life was mean and poor, and whose outlook was narrow and undeveloped. In the first Crusade a stream of 300,000 men, women, and children of all ranks and conditions poured through Hungary and Bulgaria in the direction of the Holy Land. Without means of subsistence, they plundered as they went; they murdered the victims of their pillage and were themselves slaughtered by thousands in revenge. Political historians may ascribe the adventure to the intrigue and ambition of crafty leaders inspired by religious and political fanaticism, but the Greeks who assisted some of the remnant bands across the Bosphorus regarded their leader as a lunatic and his followers as the victims of his and their own delusions. A later crusade affords perhaps, for the purpose of elucidating the present problem, an even more remarkable instance of the imperative force of obsession in the matter of conduct. Hallam, in his *Europe during the Middle Ages*, describes the children's crusade in the following terms:—"In 1211 a multitude amounting, as some say, to 90,000, chiefly composed of children and commanded by a child, set out for the purpose of recovering the Holy Land. They came, for the most part, from Germany, and reached Genoa without harm. But finding there an obstacle which their imperfect knowledge of geography had not anticipated, they soon dispersed in various directions. Thirty thousand arrived at Marseilles, where part were murdered, part probably starved, and the rest sold to the Saracens."

With the revival of learning, the diffusion of knowledge, and the extension of commerce which characterised the emergence of the Western peoples from the darkness of the Middle Ages, the occasion for these epidemics of mental aberration disappeared. In these degraded and reactionary times when force ruled everything, and the stimulus of reasonable enterprise was unknown among the masses of the peoples, the standard of mental life had sunk far below the level of its capabilities. There was here a sub-soil in which the impression of some stimulating idea would readily produce results out of

all proportion to those which the same idea would produce in an intelligent and cultivated people whose interests touched the realities of life at many points. The development of an ordered state of society, the spread of education, the diffusion of personal into social, national, and international interests precludes the recurrence, meanwhile at least, of any such gregarious form of mental aberration as has been described. Orderly conduct depends on the development and preservation of a proper balance between the emotional and educational factors in life. The emotions—fear, love, hatred, &c.—are relatively fundamental in the constitution of the individual; they are part of his original inheritance, whereas the degree of intelligence depends to a greater extent on the circumstances in which he is born and developed. The emotional life, for its proper development, demands a corresponding growth of intelligence. Education is the process by which is elaborated the normal medium for emotional reactions. If education is defective or abnormal the emotions may run riot, and this may find expression in disorders both of thought and of behaviour.

Such emotional and mental disorders, finding their expression in erratic and suicidal conduct on the one hand, and in superfluous motor agitations on the other, belong to the category of "functional" nervous diseases. The tendency of modern medicine is to discredit the existence of "functional" disease; where there is no anatomical basis for a disease the microscope or microscopic methods are supposed to be at fault, or the assistance of some imaginary organism, toxine, or chemical substance is invoked to explain the anomaly. Such an attitude is perfectly legitimate, so long as it is adopted in an atmosphere of scepticism, with a spirit of inquiry; but when it is made the basis of dogmatic teaching it is vicious and misleading. In the nervous system, at least, disturbances do occur which, in our present state of knowledge, can be best explained on the assumption that they are "functional" in character. It would be well to explain shortly the meaning of the term "functional" as contrasted with "organic" when employed in this connection. The properties of nervous structure, put in general terms, are—firstly, irritability, in virtue of which impressions are received; secondly, conductivity, in virtue of which these impressions are conveyed

to different parts of the organism ; and, thirdly, inhibitory, in virtue of which the various impressions are sorted out so that only those stimuli which are necessary to the normal function of the organism as a whole are active on the efferent side of the central nervous system. Now, speaking generally, these properties of nervous structure may be influenced in two ways: they may be influenced by involvement in a destructive lesion, and such a lesion gives rise to "organic" nervous disease ; the function of nerve structure may be perverted by abnormal irritation, or, in the case of highly irritable nerve substance, by irritation otherwise normal, and in such a case the perversion of function may be designated "functional" nervous disease. Of course, such a distinction and interpretation can only be applied with modifications, because prolonged functional irritation of neuronic centres at least would appear to lead to premature decay, on account of increased metabolic activity, and in such a case what began as functional irritation might terminate in organic dissolution.

Put, then, in very general terms, it may be said that normal nervous action depends on the preservation of a balance between the sensory stimuli which reach the "centre" of the nervous system, and the efferent stimuli which dominate the life of the organism and regulate its adaptation to its surroundings. The afferent or sensory stimuli stream from the special senses, the skin, muscles, viscera—in fact, from every part of the body. At various relay stations in their course they are damped down, and in health only such stimuli emerge on the so-called motor side as are compatible with the normal activities of the organism. A disturbance of the due proportion between afferent and efferent stimuli may arise from various causes. In the first place, these causes may be destructive lesions in the afferent nerves or in the efferent nerves, or in tracts or neuronic complexes in the centre ; when these lesions occur in the motor or sensory extremities of the system the symptoms they produce are more or less simple, and have usually a recognisable relation to the function of the parts affected: when the lesion is situated in the "centre" of the system, complicated as it may be by the intercommunication of numberless fibres of association, a recognition of the lesion is always difficult and often impossible. This is due to the fact

that a central lesion may give rise to symptoms due to the activity of parts of the centre remote from the lesion, such activity depending on an effort of accommodation on part of the brain as a whole to compensate for the disturbance due to the actual lesion; the contradictory character of the symptoms so often seen in lesions of the same parts is explicable on this basis. It should be remembered that both in health and disease the brain does not act in sectors but as a whole; it is advisable to bear in mind that while some of the symptoms of a brain lesion may be due to the direct interference with the function of the parts directly implicated, other symptoms are indirect and due to a disturbance of the function of parts otherwise healthy. These accessory symptoms which accompany 'organic' lesions of the central nervous system may vary in the same case from time to time; they may have in some cases an emotional basis, and they may be regarded as "functional" when compared with those symptoms or signs which are due directly to an interference with the activity of some structure by a lesion.

It is probably the case, however, that most functional diseases of the nervous system originate in the first instance from the character of the impulses or sensations affecting the nervous system, and from the impression which these impulses or sensations produce on the centre. In the first place, such "functional" disturbances may arise from abnormally strong stimuli acting on a normal sensorium; this may occur where there is severe shock or fright; cases will be referred to later in which soldiers during the present war have exhibited the most profound functional disturbances of the central nervous system as a result of the experience of violent mental shock. On the other hand, it is more frequently the case that a normal but delicately-balanced central nervous system is upset by shock or fright; and in such cases the shock or fright may be such as would produce no untoward effect on a normal brain. And, in the third place, where the brain is already abnormal, either from congenital defect or from acquired disease, a condition of instability exists which renders it liable to functional aberration as a result of abnormal stimulation, or even as the result of stimulation which in other cases would have no deleterious effect. It must also be remembered that severe exhaustion

from work or from disease (*e.g.*, influenza) may induce a condition of instability which in the presence of sudden stimulation from shock or fright may give rise to serious functional disorder. But apart from violent impressions of mental origin associated with shock, fright, worry, and kindred causes, the stability of the nervous system may be influenced by impressions reaching the brain from other parts of the body. Not infrequently the subject of deep-seated carcinoma is treated for months for neurasthenia; the classical signs of hysteria may be present in pregnancy and disappear immediately after delivery without any manifestation of intoxication; the subjects of heart disease are not infrequently the victims of nervous depression and emotional disorder which cannot be accounted for by mechanical deficiency in the circulation. It is highly probable that in all these cases the nervous disturbance is the result of abnormal visceral sensations playing on a delicately-balanced sensorium. Such a conclusion is in accord with the most recent teaching in psychology, which recognises the closest relationship between the emotional life and visceral sensations.

It is obvious from the foregoing considerations that a series of well-defined symptoms of nervous disorder, functional in origin, so far as the nervous system is concerned, may arise from very different causes. Thus narrowing of the visual field and loss of cutaneous sensation may be found in pregnancy, in cases with epileptic seizures, and in other cases where no other abnormality or associated cause of disease can be detected. In the same way a fine muscular tremor may be noted in exophthalmic goitre, general paralysis, hysterical shock, or in chronic alcoholism. In considering the problem of the pathological basis of chorea, the question will be raised whether this particular motor manifestation of nervous disorder may not be functional in character and associated in its inception with various contributing causes.

Before proceeding to deal more directly with the phenomena and associations of chorea itself, it may be well to recapitulate the main points suggested in the foregoing paragraphs. Chorea, as we now know it, has in all probability, as its synonym suggests, a relationship to the dancing mania of mediæval times. Times and conditions have changed, but the brain of man and its fundamental emotions remain the same. A system of individual

education and of individual struggle for existence has developed out of the gregarious state of feudal society, cemented by the ignorance of its members and the tyranny of its rulers. Motor and mental disturbances, on the grand scale of the dancing manias and the crusades, are no longer psychologically or socially possible, but their existence is probably perpetuated in the attenuated form of sporadic cases of functional nervous disorder, one of which is chorea.

It is not suggested, of course, that the causes of chorea are specifically those which produced dancing mania, but they may be said to have this in common, that while dancing mania was the result of imperative ideas acting on the emotions of a people rendered mentally instable by ignorance, superstition, and poverty, some cases of chorea are probably explicable on the assumption that a violent impression has been made on an instable sensorium by shock or fright. There are other cases, however, whose inception may be associated with abnormal visceral disturbances, or with disease of the brain itself. How far such an extended basis of pathogenesis is compatible with the various facts and theories elaborated in the course of the study of the subject during the last century will be considered in detail later on.

It was only when Sydenham described the phenomena of chorea that this condition received a place in the literature of medicine. His description is accurate and vivid, and, so far as the average case is concerned, it has not been surpassed.

“The dance of Saint Guy (chorea), *sancti Viti* in Latin, is a sort of convulsion whose incidence is greatest in both sexes between the ages of ten and puberty. Its onset is characterised by weakness in one limb, which the patient drags behind him, and soon the arm of the same side is affected in the same way. He finds it impossible to maintain the same position of the arm for two consecutive moments, however great be his efforts to attain this object. Before he can bring a full glass to his lips he makes innumerable gestures as the convulsive movements of the limb deviate it from one side to the other, until at length he has piloted the glass opposite his mouth, when he empties it at a gulp.”

While the foregoing description applies to the average case of chorea, it must be remembered that there are cases where

the movements are so slight as to be almost imperceptible, and where, if they are confined to one limb, for example, they may be indistinguishable from tics. There are all degrees of severity, from these simple forms on the one hand to violent convulsions on the other, where the patients are maniacal and delirious, and where the movements are of a convulsive type. This resemblance to tics at the one end of the scale, and to maniacal delirium at the other, is suggestive in itself, inasmuch as it brings the purely clinical phenomena of the disease into relation with well-recognised motor expressions of mental states.

While the purely clinical description of the disease given by Sydenham lacked nothing in accuracy of observation, its relationship to other diseases was not recognised until the beginning of last century. In 1802 Bright made reference to the close relationship between chorea and rheumatism, and in 1839 he suggested that the nervous manifestations of chorea might be attributed to reflex action arising from the irritation of the inflamed pericardium in rheumatic fever. In 1847 Begbie pointed out that chorea arises not only in the course of a rheumatic attack, but also quite apart from articular symptoms where there is a rheumatic history. He points out that one member of a family may suffer from simple rheumatism, another from rheumatism and chorea, and a third from chorea alone. Various other writers have attempted to demonstrate the close relationship between rheumatism and chorea, some of them going so far as to suggest that all chorea is of rheumatic origin.

A new era in the investigation of the disease began with the theory of Kirkes, who suggested, in 1863, that chorea arose from the presence of large numbers of minute emboli in the brain arterioles. These emboli were supposed to originate in the vegetations on the cardiac valves.

A third explanation of the origin of chorea, derived, to some extent, both from the rheumatic theory and embolic theory, is that chorea, or rather, that form of chorea which is known as chorea minor or Sydenham's chorea, is infectious in origin.

Various organisms have been given the credit of its origin, but there is no unanimity, and it might even be true to say there is no conviction among those who have advocated the claims of various organisms. Garrod, whose work on rheumatism is the most important on the subject, suggests that in view of

the intimate association of chorea with endocarditis it is possible that the motor disturbances are the results of a lesion of the nervous centres, and that such a lesion may belong to the fibrous group characteristic of rheumatism.

A very plausible interpretation of the phenomena of chorea is that they constitute a particular manifestation of rheumatic poisoning. According to this view, rheumatism, if it be a biological entity, would tend to manifest itself in the most varied forms under different circumstances, appearing in one case as acute tonsillitis, in another as arthritis, in another as inflammation of serous membranes, in another as myocarditis and endocarditis, and in still others as lesions of the skin and subcutaneous tissues. It would not be difficult to find, in pathology, analogous instances of such a protean form of disease. The pneumococcus and the spirochæte of syphilis are well-known examples of organisms which produce diseases appearing under most varied and dissimilar guises. It is obvious, however, that before any such definite claim can be made for the rheumatic poisoning, some more definite conception must be formulated as to what that poison really is, and as to how it can be detected.

It will be found, however, that an examination and description of a series of cases of chorea will show that these cases occur under the most varied circumstances, and associated with a variety of conditions which have no relation to rheumatism or to any of those conditions which are regarded as belonging to the so-called rheumatic diathesis. These cases have come under observation, some of them as ordinary hospital cases, others as cases of mental deficiency, and still others as cases of lunacy. An attempt will be made first of all to analyse the series from the purely clinical standpoint, and this will be followed by a discussion of the pathogenesis of the phenomena of chorea, and of the treatment which a study of the pathogenesis would suggest.

(To be continued.)

NOTES ON THE AGGLUTINATING POWER OF THE SERUM OF A PERSON INOCULATED AGAINST ENTERIC FEVER.

BY ADAM PATRICK, M.A., M.D.,

Assistant to the Professor of the Practice of Medicine
in the University of Glasgow.

(*From the Laboratory of the City of Glasgow Fever Hospital, Ruchill.*)

WHEN killed typhoid bacilli are injected into the tissues of a man or animal, anti-substances, and amongst these agglutinins, are produced by the body, and are to be found in the blood after the lapse of a few days. Similar, though not identical, changes take place in the blood of a person who is suffering from enteric fever, and the recognition of these is of much importance in the diagnosis of the disease. The following notes relate principally to observations made on the blood of a person inoculated with dead typhoid bacilli, and to differences found between this blood and the blood of enteric fever patients.

A member of the staff of the City of Glasgow Fever Hospital, Ruchill, was inoculated in the usual way with the R.A.M.C. strain of *B. typhosus* (Rawlings), kindly supplied to the hospital by Sir William Leishman. The organisms were grown in bouillon for 36 hours, and were then killed by exposure to a temperature of 53° C. for an hour. Two injections were given of this emulsion, the first of 500 million bacilli, and the second, after an interval of ten days, of 1,000 millions. The general reaction was slight, but locally there was considerable swelling of the arm, and tenderness, especially after the second dose. Widal reactions were carried out with the serum at intervals, the laboratory strain of *B. typhosus* being used for these tests. *B. typhosus* (Rawlings) was found to be unsuitable for agglutination reactions, as it was agglutinated spontaneously to some extent, and the stock laboratory strain had proved

a very reliable one for the purpose. The microscopic method was used for the Widal reactions, and the dilutions mentioned are the highest at which slight but distinct agglutination occurred. This dilution is referred to as the limiting dilution. The changes found in the blood are shown below:—

1912.
 May 17—No agglutination in a dilution of 1-25.
 22—500 million bacilli injected subcutaneously.
 25—No agglutination at 1-25.
 28—Limiting dilution 1-50.
 June 1—Limiting dilution 1-25,000.
 2—1,000 million bacilli injected subcutaneously.
 3—Limiting dilution 1-100,000.
 5—Limiting dilution 1-50,000.
 8—Limiting dilution 1-200,000.
 12—Limiting dilution 1-100,000.
 Oct. 24—Limiting dilution 1-1,600.
 1913.
 May 8—Limiting dilution 1-1,600.

This individual underwent a second course of inoculation in October-November, 1914, receiving doses of 500 millions, 1,000 millions, and 2,000 millions at ten-day intervals. Before the first of these a small dose of about 75 millions was given lest there should be an excessive reaction on account of the previous inoculation, but nothing of this sort occurred. All the doses but the last were prepared according to the method described, and caused little discomfort. The last dose, of 2,000 millions, was that supplied by the War Office, and occasioned considerable general disturbance. In February, 1915, this serum was again examined, and along with it the sera of three persons inoculated a short time previously with three doses, two doses, and one dose respectively. The results of these tests are compared in the following table:—

	No. of injections.	Days since last injection.	Limiting dilution.
R. T.,	3	91	1-100,000
(2½ years previously had 2)			
N. M.,	3	76	1-5,000
P. M.,	2	70	1-1,200
P. A.,	1	59	1-4,000

The serum (R.T.) was therefore much the most active for agglutination, though the interval between the inoculation and examination of the blood was a little longer. The previous inoculation seems to have exercised considerable influence, as on the former occasion the serum (R.T.), after the lapse of four months, much resembled that of three persons now inoculated for the first time.

The production of agglutinins in measurable quantity was found in the inoculated person to begin about the same time as it does in a case of enteric fever, that is, about the sixth day. In the disease the beginning of the illness is, as a rule, indefinite, and it is seldom possible to be precise as to the date on which the agglutinative property first appears. It was possible to establish it definitely in the case of a nurse who had been in bed for a few days under treatment for a skin condition, and in whom the date of the commencement of pyrexia was therefore known. On the fourth day of illness the serum in a dilution of 1-25 showed no agglutination of the typhoid bacillus, whereas on the seventh day agglutination was present up to a dilution of 1-100. In this patient a diagnosis of enteric fever was made by culture of *B. typhosus* from the circulating blood on the third day.

It is a remarkable fact that the serum obtained by two or three injections of killed typhoid organisms has usually greater agglutinating power than that from a case of enteric fever. In a series of 51 cases of enteric fever, it was found that the three most active sera obtained showed agglutination up to dilutions of 1-30,000, 1-25,000, and 1-20,000 respectively. In 33 out of the 51 cases it did not exceed 1-3,000, and a limiting dilution somewhere between 1-1,000 and 1-2,000 was common. The serum (R.T.) in its most active phase showed an agglutination limit of 1-200,000. A powerfully agglutinating serum (to 1-70,000) was obtained also from the rabbit, an animal which is not subject to attacks of typhoid fever, by three intra-peritoneal injections of dead organisms. In the same way with a paratyphoid bacillus a serum was obtained which agglutinated to 1-800,000. This difference between the results of an artificial inoculation and of the germs acting in disease demonstrates the possibility, at least, that in an acute infection a vaccine of the organism may

have some action different from that of the toxins of the disease. It may be mentioned here that in seven cases to whom doses of typhoid vaccine were given in the course of the illness, no striking change was found in the agglutinating power of the serum after these injections.

The activity of the serum of an immunised person in respect of agglutination may or may not be a measure of his power to resist a typhoid infection. Some writers have taken for granted that the more active the serum the better the outlook for the patient, and this idea has been used to suggest a line of treatment. Whitehead,¹ noting the fact that after hæmorrhage from an ulcer agglutination is more active, suggests that typhoid patients should be bled from a superficial vein up to 10 oz. to increase the agglutinating power of their blood. This view, that the prognosis is intimately connected with the amount of agglutinin in the blood, seems to be without clinical foundation, and it is found as a general rule that the most active sera occur in the more severe attacks. Of the above-mentioned series of 51 cases, 7 out of 8 who died showed the agglutination limit in dilutions of 1-20,000, 1-15,000, 1-13,000, 1-12,000, 1-6,000, 1-5000, and 1-400. On the other hand, recovery took place in a severe case, with hæmorrhages, where 1-400 was the highest dilution in which agglutination was found to occur.

A point in favour of the view that immunity to the typhoid infection does not vary directly as the agglutinating activity of the blood is to be found in connection with relapses. If it can be shown that a relapse depends on a re-infection, then the frequency of relapses can be compared with the frequency of second attacks. There is strong evidence in favour of the view that a relapse is of the nature of a re-infection, with this difference from the primary attack, that in the latter the patches first involved are those nearest the ileo-cæcal valve, whereas in the former the ulcerating patches are higher up the intestine. In a case observed in which a patient had a perforation of the intestine on the twenty-second day of relapse, it was found at the operation that the ulcer which had given way was in almost the highest Peyer's patch in the ileum. All those below had evidently been affected and were healed. Infection

occurs in the primary attack from bacilli taken into the mouth, but in the relapse probably by the infection of hitherto uninvolved lymphoid patches by bacilli passing out of the gall-bladder along with the bile, the presence of typhoid bacilli in the bile from the early stages of the disease onwards being a point on which all authorities are agreed. In a case of this series which came to section, the gall-bladder contained 30 c.c. of bile, with 680 million bacilli in each c.c. In the early days, both of the primary attack and of the relapse, typhoid bacilli can be grown from the blood. The point of this is, that when the relapse occurs, the blood is found to agglutinate actively, and yet there is re-infection. After convalescence, on the other hand, the activity of the blood is much lessened. For instance, in a case in which in the midst of the fever the blood showed agglutinative properties up to a dilution of 1-20,000, six weeks after the fever had subsided, the highest dilution showing agglutination was 1-100. Relapses, however, with the blood actively agglutinating, are common; second attacks, when the blood is only slightly active, are rare. It would be of much interest should a relation be discovered between the number of inoculated people who took enteric fever after they had been exposed to infection, and the number of cases in a typhoid epidemic in which relapse occurred.

Another point of difference between this artificial anti-typhoid serum and the sera of enteric fever patients was the greater specificity of the former in its agglutination reactions—it showed less tendency to agglutinate the closely allied paratyphoid organisms. The serum from almost every case of enteric fever agglutinates paratyphoid bacilli to some extent. The sera of 51 patients tested showed in every instance some agglutination of *B. paratyphosus* B (Achard), in a dilution of 1-25, though in most the limiting dilution did not exceed 1-200. The sera of these patients showed in most cases some agglutination of each of three other paratyphoid organisms (one of type B, and two of type A) of which a trial was made. The serum of the inoculated individual, at a time when it agglutinated *B. typhosus* in a dilution of 1-100,000, failed to affect any of these four paratyphoid bacilli at 1-25. Four months later, however, when the agglutination limit for *B.*

typhosus had fallen to 1-1,600, it agglutinated one at 1-50, and two of the others at 1-25.

The cause of this specificity is not certain. It is known that if an animal is inoculated repeatedly with typhoid bacilli at the usual intervals of ten days, group agglutinins are produced to a greater and greater extent; that is to say, agglutination of paratyphoid organisms occurs in an increasing degree. This suggests that the difference between the artificial serum, which did not agglutinate the paratyphoid bacilli, and the serum of a typhoid patient, which commonly does, even early in the disease, may be due to the fact that in one case agglutinins were called forth by two definite injections of bacilli, whereas in the disease a continual immunisation is going on.

REFERENCE.

- ¹ Whitehead, *Lancet*, 1911, vol. ii, p. 1067.

CASE OF CARCINOMA OF THE STOMACH WITH
SECONDARY CARCINOMA OF BONE-MARROW.

BY J. C. MIDDLETON, M.B., CH.B., B.Sc., M.A.,

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Dispensary Physician, Royal Infirmary, Glasgow;

Clinical Assistant, Royal Infirmary, Glasgow.

THE case which I wish to record presents several features of interest.

H. B., æt. 49 years, miner, was admitted to the Glasgow Royal Infirmary on 18th March, 1914. There was a history of pain in the chest, back, and epigastrium of four weeks' duration. Pain first appeared in the right mid-axillary line toward the lower ribs, and was lancinating in character. At that time a diagnosis of pleurisy with effusion was made, but there was no febrile disturbance noted. A day or two after the onset of the illness a constant dull pain appeared in the epigastrium, and this pain was aggravated by the taking of food. Vomiting took place frequently, but the vomit showed no "coffee-ground" appearance, and no melæna was noticed. Pain was also complained of in the spine, described as "running up and down the spine." Two days before admission pain was complained of over the middle of the sternum; this pain also passed through to the back. With regard to previous health, there was a history of right-sided pleurisy in 1912, and in adolescence the right elbow-joint had been excised.

On his admission to Dr. W. R. Jack's wards, it was noted that the patient was a thin, pale, anæmic-looking man, evidently in considerable pain. He stated that he had lost weight to a considerable extent since his illness came on.

The following points were noted in the physical examination:—The patient was emaciated, but not to a marked degree. The abdomen was scaphoid in character. There was no enlargement of liver or spleen, and no neoplasm could be made out in the abdomen. Stomach-dulness did not extend beyond

midway between the xiphisternum and the umbilicus. At the middle of the sternum there was a swelling, which was exquisitely tender, and on palpating it pain was experienced right down the sternum. The swelling was in intimate connection with the bone. Pain was also complained of on examining the lower ribs on both sides. An area of diminished resonance was present in the second and third interspaces on both sides, and over this area the breath sounds were diminished, but not altered in character. Behind there was a marked diminution of normal percussion resonance over the right side, and over this area the breath-sounds, while normal in character, were considerably diminished in volume. Nothing abnormal was made out on examination of the spinal column. The cardio-vascular system presented no abnormalities, and over the swollen sternum no abnormal auscultatory signs were made out. A diagnosis of secondary carcinoma affecting the bone-marrow in the sternum and ribs and also the root of the right lung was made.

Blood examination by Dr. D. T. C. Frew (23rd March, 1914) gave a blood count of red blood corpuscles, 1,400,000; hæmoglobin, 23 per cent; white blood corpuscles, 3,000. Films were characteristic of severe secondary anæmia. No nucleated reds were noted, and no megaloblasts nor any polychromatophilia. From the rapid emaciation which followed, it was thought that the primary carcinoma was in the alimentary tract.

After admission the patient vomited only once, and the vomitus contained no blood. No melæna was ever noted while he was in hospital. Pain gradually became more widespread and more severe. Several swellings appeared on the lower ribs, and the swollen ribs felt boggy, and gave the impression that even slight violence would cause fracture. So far as could be made out there was no softening of any of the long bones.

A further blood examination was made on 10th April, 1914, showing a count of red blood corpuscles, 1,200,000; hæmoglobin, 20 per cent; white blood corpuscles, 2,500. Thus the blood picture did not alter in character, but remained typical of a severe secondary anæmia.

The patient gradually sank, becoming more and more emaciated, and died on 16th April, 1914.

The *post-mortem* examination was made by Professor John H. Teacher, of whose report the following is an abstract:—

External.—The body was emaciated to the last degree. There is a very old excision of the right elbow-joint, completely healed, with considerable reduction in the size of the arm.

Thorax.—The sternum broke during removal, as also did two ribs during removal of the lungs. The bone-marrow in both appeared largely replaced by tumour. What remained was very soft and red. The right femur was split from end to end. There were nodules in the upper end and in the cavity of the shaft. The bone-marrow generally was very soft and gelatinous, and of a brown colour, showing practically no reaction, but rather atrophy and loss of fat. The vertebral bodies contained many tumours.

Heart.—Extremely emaciated. Very old endocarditis of aortic and mitral valves with slight deformity.

Lungs were both very bulky, and of a peculiar firm consistence, which Dr. Teacher compared to that of a stale sponge cake. Nearly the whole of both lungs consisted of a peculiar dull white, or fawn, coloured tissue, obviously emphysematous lung, with some foreign material in it, giving it a peculiar rigid yet crepitant feeling. In some parts the pale tissue formed rounded nodules scattered through the more healthy-looking congested lung tissue. There was marked anthracosis and emphysema in places. Both lungs were covered with old fibrous adhesions. The bronchi were wide and atrophied.

Abdomen.—*Liver* small and of deep-red colour, very much atrophied; there were no tumours. *Spleen* of moderate size; no tumours. *Kidneys*.—Rather pale and atrophied; a few minute white spots were seen in the cortex, but they were not definitely tumours. Both suprarenals contained small tumour nodules, and were considerably enlarged. *Stomach* was of extremely small size. The fundus, greatly contracted, was free from tumour to the left of the cardiac orifice, the right margin of which lay in the edge of the tumour, which surrounded the middle of the organ, contracting it so that the finger scarcely

passed through into the pyloric region, which for about 2 inches was free from tumour. There was marked lymphatic permeation, involving the glands down to the iliac crests and behind the stomach; and there were a few infected glands in the root of the neck on the left side. There was not much direct extension into the omentum, but a good deal into the suspensory ligament of the stomach, and the pancreas was tightly bound up to the back of the stomach. There was a very marked prolapse of the transverse colon. The intestines generally showed nothing else of note. Head not examined.

Microscopic Examination.—The primary tumour is an adeno-carcinoma with a great deal of fibrous formation and atrophy of the tumour cells. The secondaries in the bone-marrow appear more like ordinary carcinoma, with solid cell-masses and a good deal of fibrous stroma. The tumour in lymphatic glands is very fibrous.

Bone-marrow.—The principal feature of the bone-marrow to the naked eye was the absence of reaction. Very little marrow was found in the sections, and that was not strikingly of the erythroblastic type. The nucleated red cells were, with a few doubtful exceptions, normoblasts.

Spleen.—This showed great numbers of round and oval cells in the pulp, and signs of active proliferation of the endothelial cells. There were a considerable number of granular cells, but it cannot be said that there was a definite myeloblastic reaction.

In the *lung* it is extremely difficult to make out tumour. There is catarrh of the alveoli, which contain masses which Dr. Teacher regarded as shed alveolar epithelium, and not tumour cells; but he was really unable to decide in some cases which they were. In one section, which was fairly solid in places, he was inclined to think that the cells might be of the nature of tumour. The striking feature of the lung was the presence in it of great numbers of clear glancing bodies, which stained very faintly with eosin, but accumulated the hæmalum round their margins. These were obviously of some very hard substance and were cracked in a crystalline manner. They were found particularly replacing the middle coats of the blood-vessels, but also often as long thin plates in the walls of the

alveoli. The vessels of the liver, kidney, and spleen showed hyaline changes in the middle coats, but of quite ordinary appearance, and nothing resembling the condition of the lung. The kidney showed advanced cloudy swelling, and great numbers of hyaline casts in the tubules, and a few blocks of crystalline material, the relations of which were not clear. It seemed to be in the inter-tubular tissue.

The points worthy of notice in this case are, I think, these—

1. That the case was one of primary carcinoma of the alimentary tract. That the tumour in the stomach was not definitely diagnosed *intra vitam* was due to the extraordinary way in which the stomach was affected, and also to the fact that so much pain was experienced that detailed examination was impossible.

2. That it was recognised *intra vitam* that there were numerous carcinomatous deposits of a secondary nature in the bone-marrow.

3. That blood examination revealed an anæmia of a secondary type, and gave no indication whatever that any changes characteristic of pernicious anæmia were present.

Cases have been published in which a blood picture simulating pernicious anæmia has been shown to be due to secondary carcinomatous growths in the bone-marrow. This case shows the exact opposite, namely, recognised secondary carcinomatous growth in bone in which the blood picture was definitely of a secondary and not a pernicious type.

This picture—secondary carcinoma in bone without the production of a blood resembling pernicious anæmia—is not unique even in my experience. I saw in practice an old gentleman who for several months complained of indefinite pains in the chest and in the spine. Latterly several of his ribs fractured while he was being turned in bed. These ribs, which I had the opportunity of examining after death, were mere bony shells containing gelatinous tumour masses. This case also was undoubtedly one of secondary carcinoma affecting the bone-marrow, and though, unfortunately, I have no blood records, there was never anything clinically to suggest pernicious anæmia.

With regard to the case of H. B., it is possible that pernicious changes were present in the blood before admission to hospital, but this is very doubtful. More probably there was never any reaction on the part of the bone-marrow at all, and the tumour simply destroyed the marrow without leading to any reactive changes in it, whereas in the cases published by Harrington and Teacher¹ and Harrington and Kennedy² erythroblastic proliferation of the bone-marrow was a most striking feature. This probably accounts for the different blood picture seen in the present case.

I am indebted to Dr. W. R. Jack, in whose wards H. B. was treated in the Glasgow Royal Infirmary, and to Professor Teacher for permission to publish these notes.

¹ Harrington and Teacher, *Glasgow Medical Journal*, 1910 and 1914.

² Harrington and Kennedy, *Lancet*, 8th February, 1913.

Obituary.

JAMES DUNLOP, M.B., C.M. GLASG.

WE regret to announce the death of Mr. James Dunlop, which took place in Glasgow on 26th February. Mr. Dunlop, who was the eldest son of Dr. John Dunlop of Glasgow, was a distinguished student of Glasgow University, where he took the degrees of M.B., C.M., in 1878. After graduation he acted for a time as house surgeon to the Dispensary for Skin Diseases, Elmbank Street, and subsequently devoting himself to the study of mental diseases, became assistant medical officer to Melrose District Lunatic Asylum, a post which he held for a considerable period, leaving it at a later date for a similar appointment in Woodilee Asylum, Lenzie. Thereafter he settled in private practice, in which he had been engaged for about thirty years. His interest in mental affections led him to the study of heredity, and articles on this subject from his pen appeared in the *Journal of Mental Sciences*.

WILLIAM FREW, M.D. ED.,
KILMARNOCK.

WE regret to announce the death of Dr. William Frew, which occurred at Barassie on 2nd March. Dr. Frew, who was one of the best known practitioners not only of Kilmarnock but of the West of Scotland, had been for some time in failing health, and since his retirement from practice had lived for about three years at Barassie. He was a native of the district of Dregthorn, and his medical studies were carried on in the Universities of Glasgow and Edinburgh, at the latter of which he took the degrees of M.B., C.M., in 1872, and that of M.D. in 1884, when he gained commendation for his thesis. After

graduation he practised first at Troon, and thereafter at Newmilns and Galston. Settling in Kilmarnock in 1887, he speedily attained a prominent position there, and became known, not only as a practitioner of ability and resource, whose accomplishments and personal qualities earned him the fullest confidence of his patients, but as a writer on medical subjects, whose articles in this and other journals commanded widespread attention. His writings on cerebro-spinal fever were the first to call attention to the presence of the disease in Scotland, and formed a substantial contribution to the scientific study of the subject. He held many medical and other appointments. He was a visiting physician to the Kilmarnock Infirmary, he was at one time president of the Glasgow and West of Scotland branch of the British Medical Association, and he acted as one of the Medical assessors for Ayrshire under the Workmen's Compensation Act. He was also for many years president of the Kilmarnock branch of the Society for Prevention of Cruelty to Children. He was keenly interested in volunteering, and was retired honorary Colonel of the 1st V.B. Royal Scots Fusiliers, and had the decoration of V.D.

Dr. Frew, who was in his sixty-seventh year, will long be held in grateful recollection alike by the laity and by his professional brethren, not merely for his services in the alleviation of suffering, but for the genial humanity which gained him countless friends. He was twice married, and is survived by a widow and a grown-up family. Two of his sons are members of the medical profession, and one of them, Dr. Douglas Frew, who is at present on active service with the 4th Battalion Royal Scots Fusiliers, has succeeded him in his practice.

CHARLES ELPHINSTONE FLEMING, M.B., C.M. GLASG.,
ROYAL ARMY MEDICAL CORPS.

WE regret to announce the death of Major C. E. Fleming, Royal Army Medical Corps, which occurred in Glasgow on 2nd March, at the house of his father, Mr. John Fleming. Major Fleming, who studied medicine in Glasgow, took the degrees of M.B., C.M.,

at Glasgow University in 1897, and thereafter acted as house physician and house surgeon in Victoria Infirmary, and subsequently as house physician in the Sick Children's Hospital and in the Maternity Hospital. At the outbreak of the South African War he volunteered as a civil surgeon, and served with the Natal Field Force, receiving a commission in the Royal Army Medical Corps, and being awarded the Queen's Medal and King Edward's Medal for his services in the campaign. He passed the examination for promotion with great distinction, and was awarded six months' accelerated promotion. When the present war broke out he was in South Africa, and returned to this country in the beginning of October along with the Regular troops stationed there. Upon his return he became engaged upon military duties near Portsmouth, but his health broke down and he was invalided to Glasgow, where he died of pneumonia at 40 years of age. He was buried on 5th March in the cemetery of the burgh of Rutherglen, with military honours, the funeral being attended both by members of the Medical Corps and by officers and men of other branches of the service.

KENNETH CHARLES GORDON GRAY, M.B., CH.B. GLASG.,
BROOMHILL.

WE regret to announce the death of Mr. Kenneth C. G. Gray, youngest son of Professor Andrew Gray of Glasgow University. Mr. Gray was a pupil of Glasgow High School, from which he proceeded to the University, where he studied medicine, and where he took the degrees of M.B., Ch.B., in 1909. After graduation he acted as house surgeon and house physician in the Western Infirmary, and subsequently as indoor house surgeon in the Maternity Hospital. He then settled in practice in the Broomhill district, and bade fair rapidly to acquire the position of which his early work in hospital had given promise. While on a brief visit to London, however, he contracted pneumonia, of which he died on 18th March. He leaves behind him a widow and one child, to whom and to his parents the sympathies of the profession will go out in their premature loss.

CURRENT TOPICS.

GLASGOW AND WEST OF SCOTLAND MEDICAL ASSOCIATION.—The annual meeting of the Association was held in the Faculty Hall on Friday, 19th February, the president, Mr. Archibald Young, in the chair. The reports of the treasurer and of the editors of the *Journal* were read and approved, and other business was transacted. The following gentlemen were appointed office-bearers for 1915:—

<i>President,</i>	DR. LEONARD FINDLAY.
<i>Vice-Presidents,</i>	{ DR. GEO. A. ALLAN. DR. ARCH. W. HARRINGTON.
<i>Editors,</i>	{ MR. GEORGE HENRY EDINGTON. DR. WILLIAM ROBERT JACK.
<i>Editor of "Abstracts,"</i>	DR. ROY F. YOUNG.

Editorial Committee.

DR. A. J. BALLANTYNE.	DR. LEONARD FINDLAY.
DR. JOHN BROWNLEE.	DR. A. A. GRAY.
DR. R. M. BUCHANAN.	PROF. R. MUIR.
DR. E. P. CATHCART.	DR. E. H. L. OLIPHANT.
DR. F. J. CHARTERIS.	DR. J. R. RIDDELL.
<i>Treasurer,</i>	{ DR. W. B. INGLIS POLLOCK, 21 Woodside Place.
<i>Secretary,</i>	{ DR. JOHN ANDERSON, 7 St. Bride's Road, Newlands.

General Business Committee.

DR. J. M. COWAN.	DR. R. T. HALLIDAY.
DR. WALKER DOWNIE.	DR. W. CAMPBELL MACKIE.
DR. G. B. FLEMING.	DR. GEORGE M'INTYRE.
DR. R. S. FULLARTON.	DR. ARCHIBALD YOUNG.
<i>Auditors,</i>	{ DR. W. WALLACE. DR. JOHN SHAW DUNN.

APPOINTMENTS.—The following appointments have recently been made:—

W. P. A. Stewart, M.B., Ch.B.Glasg. (1912), to be Certifying Surgeon under the Factory Acts for the district of Larbert.

H. C. Watson, M.B., Ch.B.Glasg. (1914), to be Medical Officer of No. 2 District, Paisley Parish Council.

Royal Navy (2nd March): J. F. Quigley, M.B., Ch.B.Glasg. (1910), entered as temporary Surgeon, R.N., with seniority of 28th February.

8th March: J. F. Quigley, M.B., to *Vivid*, additional for disposal.

Royal Army Medical Corps (29th January): To be temporary Lieutenant—T. B. Marshall, M.B., Ch.B.Glasg. (1894).

23rd February: To be temporary Lieutenant—H. B. Smith, M.B., Ch.B.Glasg. (1894).

2nd March: Army Medical Service—The undermentioned Lieutenant-Colonels from R.A.M.C. to be Colonels.—R. L. R. Macleod, M.B., C.M.Glasg. (1884); W. L. Gray, M.B., C.M.Glasg. (1885), B.Sc.; Sir W. B. Leishman, C.B., F.R.S., M.B., C.M. Glasg. (1886).

Royal Army Medical Corps: The undermentioned Majors to be Lieutenant-Colonels—Brevet Lieutenant-Colonel W. S. Harrison, M.B., C.M.Glasg. (1893); D. S. Harvey, M.D.Glasg. (M.B., 1898); Brevet Lieutenant-Colonel J. M. Sloan, D.S.O., M.B., Ch.B.Glasg. (1898); L. W. Harrison, D.S.O., M.B., Ch.B.Glasg. (1897); C. C. Cumming, M.B., Ch.B.Glasg. (1899).

3rd March: Scottish Command Orders—The following have been appointed as civil medical practitioners in charge of troops at the places named:—J. Landsborough, M.B.Edin., Kames and Tighnabruaich; J. Thomson, M.D.Glasg. (M.B., 1878), Irvine; R. Armstrong, M.B., Ch.B.Glasg. (1914), Rothesay; T. Miller, M.B., Ch.B.Glasg. (1907), Dumbarton. Captain A. J. Archibald, M.B., Ch.B.Glasg. (1911), is taken on the strength of No. 3 Scottish Hospital from 31st November, and Captain John Gilchrist, L.R.C.P. & S.E., L.R.F.P.S.G., from 2nd December.

Royal Army Medical Corps: To be temporary Lieutenants—J. F. Hutton, M.B., Ch.B.Glasg. (1913), M.A.; H. J. Milligan, M.B., Ch.B.Glasg. (1905); A. Jamieson, M.B., Ch.B.Glasg. (1904); G. Muir, M.B., Ch.B.Glasg. (1903).

12th March: To be temporary Lieutenants—T. Lovett, M.B.,

Ch.B.Glasg. (1903); J. F. Steven, M.B., Ch.B.Glasg. (1914); J. H. J. V. Coats, M.B., Ch.B.Glasg. (1912).

13th March: Territorial Force—1st Lowland Field Ambulance—Captain W. C. Murray, M.B., C.M.Glasg. (1892), to be Major (temporary).

ROYAL FACULTY OF PHYSICIANS AND SURGEONS.—At the monthly meeting of Faculty, held on 1st March, 1915, the following were admitted after examination as Fellows of Faculty:—Thomas Stewart Barrie, M.B., Ch.B.Glasg. (1911), as a Fellow *qua* physician; Birendra Nath Ghosh, L.M.S. (Calcutta University), as a Fellow *qua* physician; Hugh de Mel, L.R.C.P. and S.E., L.R.F.P.S.G., as a Fellow *qua* physician; Muhammed Abdul Wajid, M.D.Edin., as a Fellow *qua* surgeon.

THE MEDICAL PROFESSION AND THE WAR.—The following memorandum and appeal has been issued by the Executive of the Scottish Medical Service Emergency Committee:—

The Director-General of the Army Medical Service, in his public letter of 10th March, makes the following statement:—“The need for medical men both for home and foreign service is acute. We want every qualified man who is physically fit and willing to serve.” This statement must convince everyone of the seriousness of the problem of medical supply—civil as well as military. As a contribution to its solution, the Emergency Committee, in the interest of the nation, desire to make through the Press the following appeals:—

1. *To the Public*.—It will materially help to relieve the great strain now imposed upon the medical practitioners remaining at their posts throughout the country—many of whom are at present working fifteen to sixteen hours a day—if patients and their friends will make a point of sending messages for the doctor as early as possible in the morning, so that the doctor may arrange his daily round in the way most economical of time. In many parts of the country this practice has already been partially adopted. We ask everyone to give effect to the suggestion. Where the case is not an urgent one, and a visit on the next day would suffice, this fact should always be stated in the message.

2. *To the Local Educational Authorities.*—Regular medical inspection of school children is very important; but it is not nearly so urgent as attendance on patients who are dangerously ill. These have clearly the first claim for medical care. We appeal to School Boards and other educational authorities to release entirely, or in part, those of their medical officers who are willing during this emergency to resume general medical work for the public. We have reason to anticipate that this proposal will not be received unsympathetically by the Scottish Education Department.

3. *To Retired Doctors of the Profession who are still (in Sir Alfred Keogh's words) "physically fit and willing."*—The Emergency Committee will be happy to hear from these, and will endeavour to give them opportunities for service, in circumstances that will not involve an excessive strain.

4. *To the Younger Lecturers and Assistants in the Medical Schools.*—At this time of the year, when the winter session closes, the teachers usually go for a week or ten days' well-earned holiday. We ask them this year to substitute a change of work for the customary holiday, and to offer their help to country colleagues in difficulty. Many practitioners, especially in rural districts, have been overworked for months, and some of them are breaking down under the strain. The temporary help of a professional brother from the schools would ease this strain, while the stimulus of his timely co-operation would act as a useful tonic for the trying days that are still to come.

The Emergency Committee is confident that their action in making these appeals will not be misunderstood. The times require the mobilisation of all our professional forces. All are desirous to help if they knew how. The function of the Emergency Committee is to indicate how and where help may be most effectively afforded.

Communications should be addressed to the Convener, Emergency Committee, Royal College of Physicians, Edinburgh.

GLASGOW HOSPITAL SUNDAY FUND.—At the twenty-first annual meeting of this fund, held in the Merchants' House on 17th March under the presidency of Sir James Bell, it was reported by Mr. Henry Johnston, secretary and treasurer, that during the past year 413 churches and 217 Sabbath schools

had contributed to the fund. The total income from these sources was £5,245, an increase of £371, forming the largest collection on record. The sum of £5,020 had been allocated to the three general hospitals in the following proportions:—Royal Infirmary (678 beds), £2,293; Western Infirmary (546 beds), £1,846; and Victoria Infirmary (260 beds), £879. With a view to placing the fund on a more satisfactory basis, the committee desired again to suggest the establishment of a capital fund by legacies and donations similar to that which existed in London.

THE LATE DR. ELIZABETH ROSS.—The following extract from a letter, published in the *Scotsman* of 6th March, gives particulars of the tribute paid by the Serbians to the memory of the late Dr. Elizabeth Ross, of whom an obituary notice appeared in our last issue:—

“I have now received a description,” says the writer, Mr. W. C. Smith, “of the remarkable funeral accorded to Dr. Ross by the Kraguievatz people. It may be taken as indicating how high a value the Serbians place on the noble efforts of these Scottish women to lessen the suffering and heal the wounds of their soldiers. First, outside the hospital in the open air, while a censer was swung, a number of priests of the Greek Church, in black robes with silver ornaments, chanted a service, which was repeated by a full choir. A procession was then formed to the church. At the head of this was the band of the Guards of the Crown Prince of Serbia, playing the melancholy but beautiful funeral march which belongs to that regiment. The chief mourners were naturally the Scottish unit, but there were many Serbian nurses and officers present. After certain acts of devotion at the church the procession reformed, and wound through the streets of the town to the cemetery, which is a little way in the country. Here at the graveside there were plenty of wildflowers. The British military attache, Colonel Harrison, stepped forward and read a short prayer from the English Service Book. Then, according to old Serbian custom, there was a peal of church bells. Fortunately the weather was brilliantly fine; hill, wood, and town all bathed in a glorious sunset. There is something deeply pathetic in this honour gratefully paid to the memory of a young Highland girl, who

no doubt represented to the Serbians the goodwill of this country."

No doubt; but we prefer to think that something less impersonal was symbolised in the touching ceremony, which, indeed, would seem from Mr. Smith's account of it to have been personally intended, and that the Serbian mourners were informed with a sense of the tragic and heroic sacrifice of youth. *Sunt lacrimæ rerum, et mentem mortalia tangunt.*

THE CARNEGIE TRUST.—The thirteenth annual meeting of the Carnegie Trust was held on 24th February in the Westminster Palace Hotel, London, the Earl of Elgin, chairman of the Trust, presiding.

The thirteenth annual report of the executive committee stated that under the third quinquennial scheme of distribution, which came into operation on 1st October, 1913, a total sum of £203,250, or £40,650 per annum, has been allocated among the universities and extra-mural colleges. Of this sum £21,250 is to be applied towards providing books, &c., for libraries, £160,750 towards the cost of new buildings and of permanent equipment, while £21,250 has been assigned towards endowments for lectureships and other general purposes.

The summary of grants from 1st October, 1913, till 30th September, 1918, shows the amounts which have been allocated. The sum due to the Glasgow Centre is £60,250, divided as follows:—University of Glasgow £50,000, Royal Technical College £5,000, Anderson's College Medical School £500, Glasgow Veterinary College £500, School of Art £1,000, U.F. Church College £250, West of Scotland Agricultural College £1,000. As the aggregate grant to each university or college accrues by equal quarterly instalments over the five years' period, the total payments at any time cannot exceed the amount of the instalments that may have accrued.

The reports of the independent authorities who have examined the record of the year's work under the research scheme of the Trust again gave evidence that its past success is being well maintained. Seven Fellows were elected in physical and chemical subjects, but one of them resigned before the beginning of the session on his appointment as scientific assistant to the Meteorological Department at Simla. The remaining six

have all justified their election by the diligence and success with which they have pursued the researches approved for them by the Trust, and in nearly every case their work has yielded results of permanent value to science. The effects of the war on the work of the research scheme are already making themselves felt in various directions. Three beneficiaries are now serving with the colours, and several of the grantees state that their opportunities for carrying on research work have been much curtailed in consequence of the absence of colleagues on military service. In some cases the difficulty of obtaining chemicals formerly supplied by German firms is interfering seriously with the progress of research, and it may be necessary on this account to allow some modification of the programmes approved for the present year.

On the other hand, the war is likely to afford a great stimulus to research in this country. The threatened stoppage of important industries from want of chemical material hitherto obtained from Germany has brought home to our manufacturers the danger of trusting to external sources of supply. Before, however, it will be possible to replace foreign by British made chemicals, in most cases much preliminary investigation will have to be carried out in the laboratory, and already many chemists are engaged in attempting the solution of some of the more urgent problems. It is generally recognised that the University and College laboratories can supply the skill and knowledge which are essential, but that a more intimate association than has hitherto existed between our industries and our Universities is necessary to the attainment of satisfactory results. Many of the Carnegie Fellows and Scholars are eminently qualified by the training and experience they have obtained in the prosecution of their researches to take an important share in this work.

In regard to biological and medical subjects seven Fellows have been at work, one on a subject connected with botany, one on zoology, one on physiology, two on phonetics, and two on pathology. The results as a whole have been highly satisfactory, although the standard of efficiency has perhaps not quite reached that attained in previous years. In four cases definite results have been obtained. It is already obvious that the European war will interfere very seriously with research work

on the part both of Fellows and Scholars and of the staffs of the Scottish Universities. A number of beneficiaries are now on service, and, especially in departments concerned with medical science, additional routine work will be thrown on those who remain, which cannot but diminish the time available for original investigation.

The expenditure for 1913-14 upon the scheme of fellowships, scholarships, and grants, and upon the laboratory was respectively £7,652, 14s. 9d. and £1,392, 12s. 5d., towards the latter of which the Royal College of Physicians, the Royal College of Surgeons, and the University of Edinburgh contributed £850. For the academic year the sum of £41,789, 3s. 6d. was paid on behalf of 3,901 individual beneficiaries. This total does not include £36, 16s. 6d. which was paid to beneficiaries for classes taken outwith the academic year, nor £1,298, the value of fee coupons issued but not yet cashed, which has been carried forward as a liability against the year now current. During the year a sum of £605, 18s. was voluntarily refunded by or on behalf of 19 beneficiaries for whom class fees had been paid by the Trust. This is the largest sum yet received in any one year. In regard to the educational qualifications of new applicants for session 1913-14 it is noted that the percentage of those qualifying by leaving certificate is 87·6 as compared with 87·1 in the previous session.

At the conclusion of the formal business the trustees considered in private the subject of grants for scientific research work. Satisfaction was expressed with the results hitherto obtained from the expenditure sanctioned by the Trust, and the question of falling into line with the promised Government scheme for aiding research was discussed. It was felt that it would be advisable to take such steps as might be necessary when the Government plans were formulated and known to secure that there should be no overlapping, and that if possible there should be some form of mutual action towards the one national aim. No decision could be taken, but the conversation was regarded as extremely useful.

DECLINING BIRTH-RATE OF SCOTLAND.—Figures of much interest, bearing upon the question of the decline of the Scottish birth-rate, are submitted by Dr. A. K. Chalmers in a recently

published pamphlet. His analysis of the evidence, which he suggests might be strengthened by an examination of local records, induces him to lean towards the view that the decline is cyclical, and not due merely to an arbitrary restriction of families, from whatever cause arising. He states that for a considerable number of years after the introduction of registration in 1855 the crude birth-rate of Glasgow was fairly well maintained at or over 40 per 1,000.

Since 1879 the fall has been progressive, and during the last five years (1909-13) the highest annual rate was 29·6 (in 1909) and the lowest 27·7 (in 1911). These were calculated on the total births occurring and registered, irrespective of the usual place of domicile of the mother. A period of industrial depression in the late seventies, marked by the failure of the City of Glasgow Bank, coincided with the beginning of the fall, but there was no corresponding and sustained recovery when industrial conditions improved. The total decline from the sixties decade might be represented by the difference between a rate of 41 per 1,000 and one of 28, or somewhere about 32 per cent. That statement of it, however, failed to allow for the varying population of women at child-bearing ages, and when the births were applied to that section of the population the actual reduction of the birth-rate in the last 40 years amounted to 37 per cent. Associated with the decrease in the birth-rate there had been, so far as Glasgow was concerned, a decrease in the marriage-rate and a reduction in the proportion of marriages contracted at early ages. The actual decline in the rate of marriage of females at marriageable ages during the last 40 years had been 12 per cent in place of 6, which was the rate of decrease when calculated on the total population. In Scotland as a whole the proportion of women who contracted marriage at ages under 20 and under 25 to the total number that were married fell almost 23 per cent and 8 per cent respectively between 1871-80 and 1901-10, and in Glasgow the proportion of males who were married under 20 years of age fell 27 per cent and of females 31 per cent in the 30 years 1879-81 and 1908-10. Comparing the number of births for the past 50 years in relation to the actual number of marriages which have taken place in that interval, Dr. Chalmers states that the births per 100 marriages would appear to have fallen from 405

to 336, or almost 15 per cent. The ratio in 1901-10 was, however, 21 per cent below that of 1871-80. To some extent this might express the result of postponement of the age of marriage, and this view gained some support from the contrasts presented in comparing the children born per 1,000 married women at the ages of 15-45 in several towns.

In Glasgow in 1890-2 for every 1,000 married women at the above ages 308 children were born, against 232 in 1910-12; in Edinburgh the corresponding figures were 262 and 188; and in Dundee 276 and 222. In other words, the fertility rate in the 20 years fell 24 per cent in Glasgow, 28 per cent in Edinburgh, but only 20 per cent in Dundee. Dr. Chalmers also cites figures of the birth and marriage rates for the first three decades of the eighteenth century and for two years of the seventeenth century, and concludes that if these were reasonably accurate, as he believed them to be, they suggested an ebb and flow of fertility over long periods, associated with and aided, it might be, by economic conditions which lowered the rate and postponed the age of marriages, but were primarily dependent on what might be regarded as fluctuations in germinal activity.

MENTALLY DEFECTIVE CHILDREN UNDER THE NEW ACT.—The fifty-fourth annual meeting of subscribers to the Scottish National Institution for the Education of Imbecile Children, Larbert, was held on 5th March, in the Religious Institution Rooms, Glasgow, Sir Thomas Glen-Coats presiding.

The Directors in their report stated that since last May the institution had been a certified institution under the Mental Deficiency Act. In the absence of sufficient institutions for Scotland they had taken in as many defective children as they could from all parts of the country. As a result the institution was now full to overflowing, and many were still applying for admission. In the meantime there were fewer applications for election than usual. This seemed to be due to uncertainty as to the position under the Act. Parents had been led to hope that school boards would set up special schools for mentally defective children. These hopes would certainly be disappointed in some cases, and if the charitable public did not continue their support great hardships would be inflicted on the families, and the children would miss the chance of training. There

were 80 elected children in the institution, and for these cases the directors felt that they must appeal to the public for support as earnestly as before the Act was passed.

The Superintendent reported that there were 415 children on the register—42 private cases, 80 elected cases, and 293 aided cases. He stated that it required about £32 per year to keep each child, and that the annual subscriptions did not provide sufficient to maintain the 80 elected children, who were unprovided for in any other way.

The financial statement showed that the income from all sources amounted to £15,027, leaving a balance of £262 on the year's operations.

The Chairman, in moving the adoption of the reports, said that the change in the law effected by the Mental Deficiency Act was desirable from every point of view. One had always felt the great difficulty and the great danger of these children after they were turned out from such an institution as that at Larbert. It was impossible for the directors to follow their progress after they left the institution, and in many cases it was the most critical time in their lives. The parents were sometimes ill able to take over the care of the children, and some oversight was often very essential. They hoped that in future the children would be better looked after when they left the institution. Sir Thomas Glen-Coats expressed the appreciation of the directors for the services rendered by Sir John H. N. Graham, who has retired from the position of chairman.

The reports were adopted.

The Earl of Zetland was elected hon. president, and Sir John Graham was elected a vice-president. Sir John Cowan, Sir David Stewart, Mr. John James Cowan, Mr. John H. Melville, and Mr. James Murray were re-elected as directors.

FEEBLE-MINDED CHILDREN.—At the annual meeting of the Glasgow Association for the Care of Defective and Feeble-minded Children, held in the Christian Institute, Glasgow, on 4th March—Dr. D. Yellowlees presiding—it was stated that the Mental Deficiency and Lunacy (Scotland) Act, 1913, having come into force on May 15, 1914, the General Board of Control on 10th August granted a certificate to the Waverley Park, Kirkintilloch, as a certified institution under the Act. It limited

the number of inmates to 90, and restricted the admission of new cases to educable defective girls between the ages of 5 and 16. As all the present inmates came within the classes of defectives defined in the Act, the Board of Control consented to their retention, although many of them were over the age of 16 when the home was certified. It would have been difficult to find accommodation for them elsewhere, as local authorities had only begun to make preparation for the increased numbers whose care in institutions would be required by the Act. The cost of maintenance for the great majority of the girls would in future be met by school boards and parish councils, and by Treasury grants, but there were 16 free cases in the home for whom so far it had not been found possible to arrange owing to technical difficulties, and until this could be done the maintenance of the girls would require to be met by the association. The number of girls in the home at the end of December was 86, as compared with 75 the previous year.

The report having been adopted, Dr. Yellowlees was re-elected president, Dr. R. S. Allan vice-president, Mr. A. A. Mitchell hon. treasurer, and Mr. A. H. Charteris hon. secretary.

ROYAL SAMARITAN HOSPITAL.—The annual meeting of subscribers to the Royal Samaritan Hospital for Women, Glasgow, was held on 3rd March in the committee room of the Merchants' House. Lord Provost Dunlop presided.

Mr. Thomas Macquaker, honorary secretary and treasurer, submitted the twenty-ninth annual report and financial statement. It stated that the number of patients treated during the year was as follows:—In-patients—In the hospital at 31st December, 74; new cases admitted, 1,491; total under treatment (being an increase of 128 over the previous year), 1,565; out-patients (being an increase of 91), 1,868—total, 3,433; attendances at out-door dispensary, 4,198. The average period of residence of the in-patients was 21 days. Of the cases treated to a conclusion (exclusive of 9 patients sent in dying), 35 died, being 1·70 per cent. All the other cases made good recoveries and were dismissed, cured or relieved. The ordinary income was £5,591; 15s. 6d., and the ordinary expenditure £6,213, 3s. 7d., leaving a deficiency of £621, 7s. 8d., which had been met out of extraordinary income. The extraordinary

income, consisting of special donations and legacies, amounted to £2,874, 7s. 5d., and, after paying the deficiency of £621, 7s. 8d. in the ordinary income, £2,132, 19s. 9d. was carried to capital and building fund account. There was an increase in the ordinary subscriptions during the year of £159, 11s. 5d., principally made up of workmen's contributions, which had not been affected by the National Insurance Act or, so far, by the war. As, however, the annual income was still £600 short of the annual expenditure, an increase in the number and amounts of annual subscriptions is earnestly appealed for to enable the directors to meet the constantly growing demands on the resources of the hospital, the patients of which consist almost solely of the wives and daughters of working men.

The Lord Provost proposed the adoption of the reports. He said the work of the hospital specially appealed to the citizens of Glasgow, as it was carried on for the purpose of alleviating the sufferings of the working women of the city. Notwithstanding the serious nature of many of the operations, the death-rate was less than 2 per cent. That spoke volumes for the skill and attention of the doctors and nursing staff. The hospital deserved the encouragement and support of the public.

Deacon Convener Beattie seconded, and the reports were approved.

Preceptor Watson proposed that the thanks of the subscribers be awarded to the hospital staff.

Mrs. D. R. Kilpatrick, who seconded, said that reference had been made to the fact that the hospital treated the poorer section of the community. There was another class which, while not poor enough to qualify for admission to the hospital, was not able to afford the cost of treatment in an expensive nursing home. They had a piece of vacant ground waiting to be built upon, and she hoped that before very long they would have paying wards for the class of patients she had mentioned.

Dr. W. D. Macfarlane, in acknowledging, spoke of the regret of the surgical staff at having lost their pathologist, Dr. Mary B. Hannay. He said there was a scientific side to the work of the hospital, and, if the house were to maintain the position to which it had attained, they must pay attention to that scientific work. He hoped the day would come when the Samaritan Hospital would have sufficient funds to endow such work.

They had a good laboratory, but money was required to provide an adequate staff. When that was secured the hospital would have no reason to be ashamed of the work it was doing from the scientific point of view. The question of paying patients was one of the serious problems they had to face. Every now and again they were met with the fact that they were taking in patients who were really not poor, but who were not able to afford the fee of a nursing home. The case of those people must be met, and he thought it could be met in a most efficient manner by the introduction of paying wards, the fee to meet not the doctors' charges but the hospital expenses. Such wards would meet the complaints that had been heard regarding the abuse of hospitals, if there was such a thing.

Preceptor Watson said the two matters raised should at an early date receive the attention of the board. Since Dr. Hannay resigned to take up a post in London the board had done all they could, so far as circumstances would permit, to find a successor. Her place was only temporarily filled, but they hoped that before long that want would be supplied. The question of paying wards had also been discussed frequently at the board. For a number of years he personally had urged the desirability of some addition of that nature to the hospital. They had the vacant ground, and they hoped, through the generosity of the very liberal public of Glasgow and neighbourhood, to be able to meet in some way that necessity also.

On the motion of Mr. William Robertson, Lord Rowallan was re-elected president; Sir John Stirling-Maxwell, Bart, vice-president; and the honorary general committee appointed at last annual meeting was re-elected, with the addition of the name of the Lord Provost. On the motion of ex-Bailie Archibald Campbell, Mr. Thomas Galloway, Mr. George Buchanan, and Mr. James Smith were re-elected directors; Mr. Thomas Macquaker, honorary secretary and treasurer; and Messrs. Wilson, Stirling & Co., C.A., auditors. A vote of thanks was awarded to the Lord Provost on the motion of Mr. R. D. M'Ewan.

GLASGOW MATERNITY HOSPITAL.—The annual meeting of subscribers to the Glasgow Royal Maternity and Women's Hospital was held on 8th February in the hospital, Rottenrow.

The chair was occupied by Lord Provost Dunlop, and among others present were Sir Hector Cameron, Mr. Robert Gourlay, LL.D., Deacon-Convener William Beattie, Mr. M. Pearce Campbell, and Colonel J. A. Roxburgh. In their report for 1914 the directors stated that it was a matter of gratification that, as compared with the previous year, the general subscriptions had risen by £153. Two years ago there was a shortage of income to the extent of £3,084. Last year the directors were able to report that they had dealt to some extent with the problem of income and expenditure, and that the deficiency had been reduced (leaving interest out of account) to £1,460. On this occasion they were in a position to report that, with the assistance of donations and legacies, the receipts had slightly exceeded the expenditure. With regard to the work of the hospital the report stated that the number of cases (including the west-end branch) had risen from 3,490 in 1913 to 3,882 in 1914. In the outdoor obstetrical department 23,997 visits (an average of 1,999 per month) were paid by the district nurses and students in attendance on patients in their homes. The war had made severe calls upon the junior medical staff, and the outdoor gynæcology department had perhaps suffered most. The dispensary had to be closed for some days during several weeks, but notwithstanding this the number of patients seeking advice had increased from 2,179 in 1913 to 2,563 last year.

Professor Murdoch Cameron reported on the work of the obstetrical department, and Dr. Robert Jardine submitted the gynæcological report.

Mr. John M. MacLeod, hon. treasurer, in submitting his report, said that the total amount of ordinary income had been £7,274, showing an increase on the previous year of £956. On the other side the ordinary expenditure had been £8,270, a decrease of £31 compared with the previous year. The net result of the ordinary working for the year was a deficit of £996, but the deficit in the previous year was £1,948, so that they had improved by £951. Legacies and other extraordinary revenue gave them a surplus on the year's operations of £25. That was quite a unique experience for the directors. He impressed upon them that they were not to take this position as "all right." The result had been obtained by the help of legacies, which were always of a fluctuating character. Expenditure

had been kept down to the bone, and there were a number of things that the directors could have done but were prevented from doing on account of the position of the funds. In addition to that they had had to cut down one of the most important branches of their work so as not to get into difficulties. That work they must resume at an early date, and for that they required to get more funds.

Lord Guthrie, who moved the adoption of the reports, referred to the fact that the subscriptions from employees in public works showed an increase of £134. He considered their increased support an even greater compliment than the addition of the word royal to the title of the institution. This year they were able to record splendid examples of what was much better than leaving money after death to benevolent institutions. Mr. William Robertson, shipowner, had given £5,000 for a clinical research laboratory, and Mr. John Anderson and his late brother, Mr. George Anderson, had gifted £1,250 for a bed in memory of an honoured mother. He was pleased to observe also that through the kindness of one of their lady friends they were to have the privilege of sending patients to the home at Shandon, and were thus enabled to solve the problem of discharging women in a merely convalescent condition, but still unfit to resume what in many cases was a toilsome and unrelieved lot. These and other features made the report a notable one. In urging that the hospital was deserving of even more support than it had hitherto received, Lord Guthrie referred to the desirability of obtaining more legacies, and suggested that solicitors who had an influence with testators or testatrices could help in this direction. Alluding to the operation of the Insurance Act, Lord Guthrie said he trusted that whatever aid might be received from the State the hospital would always remain a voluntary institution. He believed it would be a calamity if that hospital were carried on by officials, however excellent, and they were to lose the benefit of the labour, the zeal, the tact, and the knowledge of their directors, the Ladies' Committee, and other agencies engaged in the work.

Mr. Joseph Patrick, C.A., seconded, and the reports were adopted.

After the customary votes of thanks, the election of directors from the qualified contributors and subscribers was moved by

Colonel Roxburgh and seconded by the Rev. J. A. C. MacKellar, and the appointment of the Ladies' Committee was proposed by Dr. Gourlay and seconded by Mr. William Beckett.

GLASGOW ROYAL ASYLUM.—The annual meeting of the subscribers to this institution was held on 18th February in the Religious Institution Rooms, Glasgow, Bailie Hannay presiding in the absence of the Lord Provost. In presenting the physician-superintendent's report, Dr. Oswald stated that there were 442 patients under treatment at the beginning of last year, and 441 at its close. The admissions numbered 116, or 4 fewer than in the preceding year. There were 87 discharges and 30 deaths, The total number under treatment was 558, and the average number in residence was 443. A gratifying feature in regard to the admissions was that out of the 116 there were 39 who came voluntarily for treatment. The prospect of recovery was much more favourable in these cases than in others. The increase in voluntary admissions pointed to a better conception of the nature of insanity, and it pointed also to confidence on the part of the public in the treatment received in the institution. He looked forward with confidence to the time when the legal step of certification and detention by order of the sheriff would be rarely necessary in the treatment of what was after all only a physical disease.

In no case so far as his observations went could the outbreak of the European War be put down as the cause of mental breakdown, although in a number the symptoms were coloured by its results. It was natural to anticipate an increase in the number of nervous troubles during a time of war. Long-continued personal anxiety for self or others was sure to set up recrudescence of dormant weakness, and all forms of nervous instability were prone to be at those times more manifest. He was bound to state, however, that during the past six months he had seen much less of these than might have been expected. Rather had it appeared to him that the national need had raised the level of the national health, and at all events there had not been to his observation any increase of insanity.

He did not refer to combatants—to those who had been in the firing line—but while a large number of these, more officers than men, had suffered from nervous symptoms of ill-defined

character, resembling what was known in the records of railway accidents as shock, it was fortunately true that this condition had only rarely passed into insanity, and it was with pleasure that one reported that even in the more severe forms of shock such treatment as was given in homes and such treatment as was known as "rest cure" had been quite sufficient in the majority of cases to restore health and to bring about the disappearance of nervous symptoms.

Dr. Oswald went on to say that the trend of the medical profession in recent years had been largely in the direction of preventing disease, and that the beginning of the second century of the Glasgow Royal Asylum's history saw increasing attention being given to the scientific side of mental disorders and the formation of laboratories where the relation between mind and body was inquired into. He believed that the future held hope for the mentally afflicted, and that the work being done would throw much light on the deeper and more fundamental causes of departure from normal mental activities.

The Chairman moved the adoption of the report of the directors, which briefly enumerated the main events in the 100 years' history of the asylum, summarised in a previous issue of the *Journal*. A recent development of the work had been the establishment of a laboratory for research, where most important scientific experiments had been conducted. That, of course, was in no sense part of the work of the asylum, and was therefore open to be assisted by the generosity of the citizens. He could think of no more useful direction in which the surplus wealth of generous citizens could be directed than in assisting research work in mental diseases.

Dr. Yellowlees, in moving a vote of thanks to Dr. Oswald and the medical staff, commended the work that was being done in the asylum. He had the highest opinion as to the importance of the work which was being done in the laboratory. It was by work such as that that they hoped to learn much more than they knew at present of mental diseases.

The following were elected directors, representing the qualified contributors :—Dr. Robert Gourlay, Mr. J. E. Roxburgh, Mr. Francis Henderson, Mr. John Pirie, Dr. Yellowlees, Sir William Bilsland, Mr. R. D. M'Ewan, and Dr. R. O. Adamson.

GLASGOW LOCK HOSPITAL.—The annual meeting of the Glasgow Lock Hospital was held in the Religious Institution Rooms on 25th February, Lord Provost Dunlop in the chair. The report by the directors bore that during the year there were admitted 300 patients, as against 240 in 1913 and 251 in 1912. Owing to the improved methods of treatment the average sojourn in the hospital was 41·9 days compared with 49·06 in 1913. In the course of 1914 there were admitted 11 girls of 16 years, 5 of 15, 2 of 14, 6 of respectively 13, 12, 11, 8, 6, and 5, 2 of 3, 4 of 2, and 11 infants of from one week to eight months. The financial statement for the past year shows the ordinary income to have been £1,301, 19s. 6d. and the ordinary expenditure £1,500, 7s., leaving a deficiency of £198, 7s. 6d., which compares with a deficit of £4, 10s. 3d. in 1913. This deficiency is partly accounted for by reduced subscriptions, but principally by reduction in parish patients, with increase in patients with lines. The Chairman, who moved the adoption of the report, said the value of the work done by such an institution from the point of view of the physical and moral well-being of the community could not be exaggerated. The hospital discharged an indispensable public service. Mr. R. C. Greig, in seconding, mentioned that the Magistrates of the city had granted a seal to the hospital in 1807, and one of the stipulations was that the Lord Provost should preside at the annual meetings. Councillor Dr. Erskine, who moved the re-election of office-bearers, took the opportunity of referring to the development of the outside department of the hospital. Arrangements had been made whereby patients could be treated in their homes. The report having been approved and office-bearers elected, the meeting closed with a vote of thanks to the medical and nursing staff, on the motion of Dr. Young.

ROYAL ALEXANDRA INFIRMARY, PAISLEY.—The annual report of this institution, submitted at the annual meeting of subscribers held in the infirmary on 1st March, ex-Provost R. K. Bell presiding, states that during the past year 1,557 patients were treated in the infirmary, 468 being medical and 1,089 surgical, and of the total number 123 died—66 in the medical ward and 57 in the surgical. Of the 123 who died, however, 46 were moribund when admitted.

The total income for the year was £7,623, 13s. 8d., a decrease of £101, 7s. 11½d., and the total expenditure £8,278, 15s. 4d., a decrease of £172, 5s. 6½d. compared with the previous year's figures, and the net result of the year's intromissions was a deficit of £655, 1s. 8d. The accumulated deficit at the close of 1913 was £3,083, 2s. 10d., and with last year's deficit added the total deficit at 31st December, 1914, was £3,738, 4s. 6d. For some years past the directors had viewed with apprehension this accumulating burden, but they were now in the fortunate position of being able to report that, owing to the generous manner in which the claims of the infirmary has been recognised by the executor of the late Sir William Dunn, a donation of £14,000 having been received, the deficit has been completely liquidated. After careful consideration it had been decided not to carry to endowment any part of the balance, but to leave it available for disposal as may be found most advantageous. It has also been resolved to make permanent recognition of the donation by naming a ward "The Sir William Dunn Ward" and putting up a suitable inscription recording the gift. The average cost per occupied bed was £79, 18s. 6d. as compared with £80, 1s. 6d. in 1913. These figures include the cost of the dispensary, which in other institutions is usually excluded. Excluding the dispensary the cost for 1914 was £77, 4s. 10d. as compared with £77, 6s. 4d. in 1913.

Additions to the Endowment Fund by legacies and donations were intimated. These included an anonymous donation of £1,300 to endow a bed in memory of Daniel M'Kinlay, M.D., Paisley, who died in 1860. The total addition to the Endowment Fund during the past year was £3,568, and the fund as at 31st December, 1914, amounted to £87,195. The finances of the institution were for the present in a satisfactory condition, but it had to be borne in mind that the normal expenditure was largely in excess of the ordinary income, and that to maintain the efficiency of the institution an increased expenditure must be contemplated.

NEW PREPARATIONS, &c.

From Messrs. Burroughs Wellcome & Co.

'Tabloid' Water Steriliser and *'Soloid' Potassium Iodide and Starch*.—The former consists of tablets of chlorinated lime, each equivalent to chlorine (gr. 1) and tablets of sodium thiosulphate (gr. 6). One 'tabloid' of chlorinated lime is powdered and mixed thoroughly with ten gallons of the water to be treated, and the mixture is allowed to stand for fifteen minutes. A little of this mixture is then poured on to one 'soloid' potassium iodide and starch; if a blue colour develops, free chlorine is indicated. This shows that enough chlorinated lime has been employed, and that there is reasonable certainty that the water has been freed from living typhoid and cholera organisms, and from those bacilli which are known to cause dysentery. If, however, free chlorine is not indicated at the end of fifteen minutes, more of the chlorinated lime is added and the process repeated as before, if necessary, at intervals of fifteen minutes, until the blue colour appears. Then one 'tabloid' sodium thiosulphate is dissolved in an ounce of the water, and, finally, this solution is thoroughly mixed with the rest of the ten gallons. All taste of the steriliser should thus be removed, leaving the water ready for drinking.

It is reported that such a method of sterilising water has been developed and used in connection with the Expeditionary Force on the Continent, and it is certainly a rapid and convenient method.

Messrs. Burroughs Wellcome & Co. are to be congratulated on providing this very convenient outfit for the purpose, and no doubt it will be equally serviceable in civil practice.

From Messrs. The Malt Butter Co., Limited.

Ferguson's Patent Malt Butter.—This is a rich cream-coloured buttery substance, with a nutty odour, sweet and palatable to the taste, such that children would take it very readily. It can be spread on bread, and used in the making of pastry, sauces, sweets, &c. It is claimed that it is made from the finest British barley and the purest and most nourishing vegetable ingredients, and that it does not become rancid, and will keep sweet and fresh for an indefinite time in any climate. May we, however, suggest that it is not "the most perfect digester of food known to science," and that it is not yet "universally prescribed"

by the medical profession as the highest form of food? It is not necessary to overstate the case quite so strongly in the literature which accompanies the sample. However, it is a pleasant article of diet, and is the product of a firm with address in Glasgow, and we beg to draw the attention of the profession to it.

From Messrs. Jewsbury & Brown.

Posological Tables, B.P., 1914.—This is a nice little red cloth-covered booklet, which contains the comparative doses and strengths of the various pharmacopœial articles for 1914 and 1898. The new doses are given both in metric and imperial measure, and the publication should prove convenient and useful. This well-known firm, who manufacture many different kinds of mineral waters, aerated beverages, and non-alcoholic cordials at their Manchester works, and who are proprietors of "Stretton" natural mineral water (Shropshire), deserve all credit for their enterprise in providing such a tasteful and useful little book.

REVIEWS.

Gas Poisoning in Mining and other Industries. By JOHN GLAISTER, M.D., D.P.H., F.R.S.E., and DAVID DALE LOGAN, M.D., D.P.H. Edinburgh: E. & S. Livingstone. 1914.

"AN attempt has been made to focus within reasonable limits our knowledge of the subject of poisoning by carbon monoxide and other gases arising chiefly in mining and other industrial pursuits." This is the object of the book as stated in its preface, and one must say the attempt is an excellent one. Such a book was evidently required; the authors claim to have had considerable experience, each from his own standpoint, in the matters discussed. The result of their work is that we have here a valuable compilation of the work of others much enriched by their own experiences, and by the careful consideration they give to the views of all.

The bulk of the work is made up of an exposition of the actions of CO, the treatment of poisoning by it, the pathology produced by it, and its detection and estimation in the body and in air or gases. The symptoms and signs produced by CO appear protean in their variety, and apparently it is still impossible to give a confident prognosis in any particular case of poisoning by this gas, as even after apparent recovery relapses and death may occur some time afterwards. We cannot too highly commend this portion of the work, and it is to be expected that it will become a standard reference on the subject.

While this is the most important part of the book, one appreciates also the introductory chapters, which give a clear picture of the working of collieries and how accidents of various kinds may occur in them, leading to poisoning by various gases from fires, explosions, &c., and also how these may be, and are being, averted. A very clear exposition of how gas poisoning

may arise in many other industries is given, and a wealth of examples accompanies the description.

At the end of the book the apparatus and methods to be adopted for rescue work in mines is discussed in a most judicial spirit. Two plans of mines where fatal accidents happened are given, and a long bibliography is appended. The substance of the new draft mine rescue regulations of May, 1914, has been added just before publication. There is a sufficient index.

To sum up: there was need of such a book, and the need is well met by this book. Its plan is good, the descriptive writing is clear, adequate reasons are advanced for the opinions stated by the authors, and there is no unnecessary padding. We congratulate the authors on their work.

A Manual of Diseases of the Eye. By CHARLES H. MAY, M.D.,
and CLAUD WORTH, F.R.C.S. Eng. London: Baillière, Tindall
& Cox. 1915.

THIS is the fourth edition of this well-known text-book, and in the main it upholds the reputation of its predecessors. It is not a treatise, but we think it is an excellent text-book for junior students. Considering its size, the authors have managed to get into this small volume a large amount of reliable and excellent information. The book is well printed, and is very admirably illustrated, some of the coloured illustrations being unusually good. We can cordially recommend it to students.

Elements of Surgical Diagnosis. By Sir ALFRED PEARCE
GOULD, K.C.V.O., M.S. Lond., F.R.C.S. Eng. Fourth edition.
London: Cassell & Co., Limited.

THE present volume is the fourth edition of this well-known work. It is to all intents and purposes a new book. The methods of surgical diagnosis have altered so much since 1884, when the first edition was issued, that, as the author suggests,

a comparison of the one with the other compels the reader to see how great the changes and advances are in thirty years. The book consequently is bigger; it is illustrated, though not fulsomely; and some altogether new matter has found a place. Reading is facilitated by prominent type to indicate important points or new subjects.

The methods of examination taught by Sir A. Pearce Gould are such as will commend themselves to every teacher of surgery. Clearness and lucidity of statement, and the short descriptive sketch of the main features of surgical conditions, make the book eminently suitable for the student, for whom it is indeed written. We have pleasure in regarding the work as probably the best of its kind.

The Prevention of Dental Caries and Oral Sepsis. By H. P. PICKERILL, M.D., Ch.B., M.D.S. Birm., L.D.S. Eng. Second Edition. London: Baillière, Tindall & Cox. 1914.

THE early demand for a second edition of this work is an adequate proof that Dr. Pickerill's views on dental caries and oral sepsis are widely appreciated by dental practitioners. An apparently agreeable didactic style of composition throughout undoubtedly also contributes to the popularity of his writings. A considerable amount of additional matter—most of which the author claims as original—adds interest to the present volume; otherwise, it is brought up to date by the discussion of the many late developments of the neo-Millerian sophistry concerning immunity and liability to dental caries. Dr. Pickerill maintains the naturally questionable doctrine that the chief function of the saliva is to prevent caries rather than to aid digestion! In a short historical prelude he tries to show that the persistent use in bygone times of acid dentifrices is empirical evidence that the flow of alkaline saline prevents caries. Again, contrary to his own preconceptions on the causes of dental decay, he justly admits that certain communities who live almost exclusively on soft carbohydrate foods are peculiarly free from caries; the real reason being, he maintains, that the sapidity of their food induces a full flow of alkaline detergent saliva. Contrariwise, the food of highly

civilised races being bland and insipid, paralyses and vitiates the salivary flow, and thus induces caries. In this edition he also countenances the modification or refinement of the salivary theory of dental caries, that certain derangements of the ductless glands vitiate the saliva. In a word, Dr. Pickerill has added to the quickly increasing difficulties of the neo-Millerian theory of dental caries rather than reduced or solved them.

The Medical Annual: A Year-Book of Treatment and Practitioner's Index, 1914. Bristol: John Wright & Son.

THE thirty-second issue of the *Medical Annual* is larger by about one hundred pages than any previous issue. This circumstance has not to be interpreted as meaning that the *Annual* is more prolix than its predecessors, but as being due to the ever-increasing scope and activity of medical science in all its departments. It has always been a prime feature of the *Annual* that the matters discussed have been presented in the most concentrated form, and it has worthily upheld its place in the medical library as an important guide to our thoughts, and in presenting in a very thorough and efficient manner the main advances in medical science in a graphic way.

The present volume is quite up to the level of previous issues, and no practitioner who wishes to be abreast of the times can afford to be without a copy.

Mechano-Therapeutics in General Practice. By G. DE SWIE-TOCHOWSKI, M.D., M.R.C.S. London: H. K. Lewis.

THE object of this little book is the laudable one of breaking down the "barrier between a large number of men in general practice and the application of mechano-therapeutics." We have to admit with the author that the practitioner is generally most unwilling to practise what every surgeon, at least, now regards as an essential part of treatment of very many conditions. So far as our observation goes, the reasons are mainly

two, that he has not the time necessary, and that the prospects of adequate monetary recompense are remote. The author of this little *brochure* sees another reason in prejudice against something new, and hopes that he has succeeded in raising interest in a subject too often left to quacks and amateurs, and not really beneath professional dignity.

This work is written in quite an interesting if unpretentious style, and may serve as an introduction to the subject to those desirous of further study. To the average general practitioner there is as much information as he needs, and we have no doubt that both he and his patients will benefit by the additional means of practice at his command.

A Short Handbook of Cosmetics. By DR. MAX JOSEPH. Second English Edition, revised, with Appendix. London: William Heinemann. 1914.

THIS little volume, favourably noticed in these columns on its first appearance, has met with so favourable a reception at the hands of the medical public that a second edition is now called for. Its object is to furnish medical men in a brief compass with that knowledge of the hygiene of the skin and hair, and of their minor affections, which their curriculum does not supply, and which even the text-books of dermatology too often fail to provide. It will be found a useful and safe guide in a minor but not unimportant branch of medicine.

Essentials of Human Physiology. By D. NOËL PATON, M.D., F.R.S. Edinburgh: W. Green & Son. 1914.

THIS new, the fourth, edition of Professor Noël Paton's *Essentials of Physiology* is a very distinct improvement on its predecessors. Not only has it been carefully revised and brought up to date, but much new matter has been incorporated, and this without rendering the book unwieldy. This new edition should appeal to a circle of readers other than actual students, as Professor

Paton has seized the opportunity of recasting the form of the book. He has given prominence to those parts of the science which bear most directly upon medical and surgical practice, and has made constant reference throughout to the disturbances of function which occur in morbid conditions. He has added a section on the regulation of metabolism, which is a concise statement of our present knowledge of the glands with internal secretions.

From the student's point of view the value of the book as a text-book has been enhanced by a great elaboration of the contents table.

The book, as before, is well illustrated with numerous original figures and diagrams, which, in contradistinction to the majority of diagrams, actually *do* help towards the grasp of the point illustrated.

Diseases of the Labyrinth. By DR. ERICH RUTTIN. Translated by HORACE NEWHART, M.D. London: William Heinemann.

WE owe to the Vienna School a large part of our knowledge of labyrinthine disease. To Neumann, Barany, and Ruttin we are specially indebted; so that we have studied with interest this work by the last of these, and although some criticisms naturally suggest themselves when we are dealing with the expressions of opinion of a pioneer in what is practically a new, as well as being admittedly a difficult, subject we can hardly praise too highly the lucidity with which the various problems are treated. Our vision has for so many years been focussed on the vestibular apparatus that we have been inclined to forget that the labyrinth also comprises an auditory portion. The author does not fall into this error, but shows the importance of a consideration of the auditory function in regard to the indications for operation on the labyrinth. The question of nystagmus is, of course, considered in detail. It is a most interesting, as it is also in some respects a most difficult, study. We are inclined to think, however, that from the clinical point of view this part of the book might have been curtailed. There is not agreement as to the process by which nystagmus as a response to the several stimuli is brought about. We also think

that the endeavour to discover the condition of individual semi-circular canals by changes in the position of the head during the application of the tests cannot lead to results sufficiently reliable to be of clinical value. As a matter of fact, what we want to know in a given case is whether or not the labyrinth is still functioning, and if a response is obtained to the stimulus applied, the direction of the nystagmus is not of much importance. We commend the division of labyrinthitis into circumscribed, diffuse serous secondary, diffuse purulent manifest, and diffuse purulent latent labyrinthitis, but we do not see why serous induced labyrinthitis should be considered apart.

The indications for operation on the labyrinth are carefully considered, and we are glad to notice a more conservative attitude than that at one time taken by the Vienna School. We agree that so long as the labyrinth responds to stimuli, or so long as some hearing remains, there is no urgency to perform the operation on the internal ear. We should insist more strongly on the differential diagnosis between serous and purulent labyrinthitis occurring in the course of acute middle-ear suppuration, in which an exact diagnosis is of supreme importance.

The labyrinth operation recommended by Ruttin is that to which Neumann's name is attached, and with this the reviewer is inclined to agree, though in this country the less extensive procedure known as Hinsberg's or, simply, double vestibulotomy, is the one more usually adopted.

The book finishes with the histories of 108 cases of labyrinthitis. The large number surprises us till we notice that many are included which in this country we should probably have described as middle-ear suppuration with labyrinthine symptoms. In such cases the labyrinthine symptoms have been looked upon as due to irritation from the proximity of the middle-ear disease, and disappear after the performance of the radical mastoid operation, or after the cure of the middle-ear disease by some other method. Strictly speaking they should be considered as cases of circumscribed labyrinthitis.

No aural surgeon can afford to be without this book. The translation, we may remark, is admirable.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

SURGERY.

The Physician and Acute Osteomyelitis. By J. P. W. (*American Journal of Surgery*, January, 1915).—The physician has drawn upon himself much blame and criticism from the surgeon for his tardiness and temporising in cases of appendicitis, and perhaps not undeservedly. The same may be said regarding gastric and duodenal ulcers, empyema, metrorrhagia, and others. But in all these conditions there is a place for the physician at one time or another, even in cancer. Acute osteomyelitis never calls for the physician's services. He has no business with it for a single minute. Many surgical conditions heal without surgery. Some may be aggravated by surgery. Acute osteomyelitis, however, is easy of diagnosis, even in its earliest stages, and its treatment is so simple that surgery at its worst cannot do as much harm as the disease.

—CHARLES BENNETT.

Case of Inoperable Carcinoma of the Rectum becoming Operable under Radium Treatment. By Sampson Handley (*Proceedings of the Royal Society of Medicine*, December, 1914).—A man, aged 60 years, had suffered from rectal irritation with morning diarrhoea, traces of blood being frequent in the stools, for eighteen months. The author detected, by means of the sigmoidoscope, an ulcer about 5 inches above the anus. Part of the lower edge was submitted to histological examination and was found to be carcinomatous. The condition was considered inoperable. Dr. Finzi applied 155 mg. of radium bromide to the ulcer for forty-eight hours. A fortnight later there was reactionary irritation of the bowel, but this was soon controlled. After thirty-five days, bleeding and pain ceased. The edges of the ulcer were now flat. The abdomen was opened two months after the author first saw the case, and the radical abdomino-perineal operation performed. Radium was left in the pelvis and removed after twenty-four hours. Although the patient developed two pelvic abscesses, yet he made a good recovery, and now, more than a year after his operation, he is in good health.—CHARLES BENNETT.

The Proper Depth of Anæsthesia. By W. D. Gatch (*American Journal of Surgery*, *Anæsthesia Supplement*, January, 1915).—In this paper the author wishes to offer evidence in support of the view that the lightest possible

anæsthesia which will suffice for a given operation is the best. He groups the injurious effects of general anæsthesia under two heads—(1) direct injuries due to the toxic effect of the anæsthetic upon the tissues, and (2) indirect injuries caused by the interference of the state of narcosis with physiological processes. The most important of the latter are due to asphyxia and to muscular relaxation. While muscular relaxation may help the surgeon, the author denies its necessity. He believes that it causes “surgical shock” instead of preventing it. In his practice he uses either nitrous oxide with oxygen, or ether on a mask with heavy folds of gauze and a considerable dead space. The patient is anæsthetised slowly, and he must not be allowed to become cyanosed, nor should struggling take place. Shortly after he has ceased to respond to questions the operation is begun. Sharp dissection is employed, and the minimum of dragging on tissues adopted. The effect of each manipulation on the patient is noted, and, occasionally, pause is made to allow the anæsthesia to be somewhat deepened. In laparotomy with resection of bowel, once the segment to be resected has been located, very little anæsthetic is required until the abdomen is to be closed, and when the parietal peritoneum has been sutured no more anæsthetic is employed. The patient is almost awake before leaving the theatre.

The post-operative ill-effects are very few, and vomiting rare. Nearly every patient (except those who have undergone laparotomy) is ready for nourishment within three or four hours.

The great veins of the abdomen can contain more than all the blood in the body, and they have no valves. The author has made experiments to show that abdominal tension, in addition to vaso-motor mechanism, is necessary to prevent overfilling of the abdominal veins. Muscular relaxation greatly lessens the intra-abdominal tension, and is therefore a large factor in the production of shock.

—CHARLES BENNETT.

DISEASES OF CHILDREN.

Infantile Scurvy: the Blood, the Blood-vessels, and the Diet. By A. F. Hess, M.D., and Mildred Fish (*Amer. Jour. of Diseases of Children*, December, 1914, p. 385).—In this paper the authors consider the disease chiefly as an affection of the blood and blood-vessels, although some attention is paid to the matter of diet.

The coagulation time was estimated after the method of Howell. The blood was withdrawn direct from the jugular vein, and allowed to flow into a 1 in 10 solution of sodium oxalate, as they found that whenever the blood came in contact with the tissue juices the results were vitiated. So far as these workers could discover, there was no change in the coagulation time, nor was there any increase of antithrombin, and the blood platelets were normal in number. The blood simply presented the picture of a secondary anæmia.

Since the above factors are insufficient to account for the hæmorrhages, the authors turned their attention to the resistance of the blood-vessels. This was tested by placing on arm the armlet of a blood-pressure apparatus and inflating, and thus raising the intravascular pressure in the distal portion of the limb. It was found that in a normal child a pressure of 90 mm. could be withstood for three minutes without any harm resulting, whereas in scurvy the vessels gave way and petechial hæmorrhages developed. The authors state that the test is

not specific for scurvy, but is a method of demonstrating a weakness of the vessel wall, whatever may be its cause.—LEONARD FINDLAY.

Internal Hydrocephalus: an Experimental, Clinical, and Pathological Study. By Walter E. Dandy, M.D., and Kenneth D. Blackfae, M.D. (*Amer. Jour. of Diseases of Children*, December, 1914, p. 406).—In this most interesting paper the authors review at great length the history of this condition, and the physiology and pathology of the cerebro-spinal fluid and its secretion. The following are the authors' conclusions :—

An internal hydrocephalus was experimentally produced in dogs by placing an obstruction in the aqueduct of Sylvius. It is therefore evident that the cerebro-spinal fluid is formed in the ventricles faster than it can be absorbed, and that the aqueduct of Sylvius is essential for its escape.

An internal hydrocephalus resulted from placing an obstruction in the aqueduct of Sylvius in spite of the extirpation of the choroid plexus of both lateral ventricles, but this procedure apparently modifies the grade of the internal hydrocephalus.

An internal hydrocephalus may also result from an experimental ligation of the vena Galeni magna near its origin. When the ligature is more distally placed, or when the sinus rectus alone is ligated, an internal hydrocephalus does not result, owing to the efficient venous collateral circulation.

Cerebro-spinal fluid is derived mainly from the choroid plexuses, probably both by filtration and secretion. An increase of cerebro-spinal fluid is caused by general venous congestion, as demonstrated by temporary jugular compression. This increase of fluid ceases when the congestion is relieved by the collateral circulation.

Drugs and glandular extracts produce but slight change in the rapidity of formation of cerebro-spinal fluid. Pilocarpin produced a slight increase.

There is a definite impermeability of the fluid-forming structures. Of the various substances in solution in the blood only traces of a few find their way into the cerebro-spinal fluid. The cerebro-spinal fluid is more strongly protected from substances in the blood than the peritoneal, pleural, and pericardial fluids.

There is a rapid and constant formation and absorption of cerebro-spinal fluid. A new supply is formed and absorbed at least every four to six hours.

The lymphatics play a negligible part in the absorption. The fluid is absorbed directly into the blood, and absorption is from the entire subarachnoid space. It is a diffuse process, and does not take place through specialised structures such as the pacchionian bodies, or through stomata opening into the venous sinuses. That stomata do not exist is shown by the fact that granules do not readily pass from subarachnoid space into the blood. There is practically no absorption from the ventricles.

The maintenance of an equilibrium between the formation and the absorption of the fluid necessitates a communication between the ventricles and the subarachnoid space. Communication is solely by the foramina of Magendie and Luschka.

After the introduction of phenolsulphonephthalein into the subarachnoid space it soon appears in the lateral ventricles. There are, therefore, no valves at these openings. If an obstruction exists at the aqueduct of Sylvius, phenolsulphonephthalein does not appear in the spinal fluid, therefore the so-called foramina of Mierzejewsky and Bichat do not exist.

Granules placed in the subarachnoid space, without pressure, are soon uniformly distributed throughout the entire spinal and cerebral subarachnoid space. There is no evidence of a current to the region of the venous sinuses. Granules pass along the olfactory and optic nerves, over the Gasserian ganglion and a short distance along the auditory nerves, but not along the remaining cranial and spinal nerves.

Internal hydrocephalus can be divided into two anatomically different types, depending on the patency or occlusion of communication between the ventricles and subarachnoid space.

In seven patients with internal hydrocephalus, lack of communication was demonstrated clinically. In each of these patients there was practically no absorption from the ventricles, while the subarachnoid absorption was high. The internal hydrocephalus, therefore, resulted because the passage of fluid from the ventricles into subarachnoid space was prevented.

Four cases of internal hydrocephalus in which there was communication between the ventricles and the subarachnoid space were studied. In these there was a low subarachnoid absorption. Meningitis was the cause of the hydrocephalus in two patients with the obstructive type, and two with the communicating type of the mischief.

The probable cause of internal hydrocephalus following the excision of a meningocele is the limitation of absorbing surface, and consequent diminution in absorption of the fluid.

Surgical treatment differs according to the variety of the disease. In the *obstructive type* the obstruction must be removed, whereas in the *communicating type* it is necessary to increase the area for the absorption of fluid.

A very full bibliography is appended to the paper.—LEONARD FINDLAY.

A Study of Tuberculous Lesions in Infants and Young Children, based on Post-mortem Examinations. By Martha Wollstein, M.D., and Frederick H. Bartlett, M.D. (*Amer. Jour. of Diseases of Children*, November, 1914, p. 326).—The investigation extended over six years, and included 1,320 autopsies, in 178, or 13·5 per cent, of which tubercular lesions were detected. The patients varied between 2½ months and 5 years of age; 75 per cent of the cases were under 2 years. In the whole series there was not an example of congenital tuberculosis.

By far the largest number of cases were examples of infection by inhalation. The following is a summary of the findings, classified according to route of infection and organs affected:—

A. INHALATION GROUP.

- | | | | |
|----|---|---------------------|---------------|
| 1. | Tuberculosis of bronchial glands alone, | . . . | 5 cases. |
| 2. | " | " and lung, | . . . 2 " |
| 3. | " | " and pia mater, | . . . 1 case. |
| 4. | " | " and fingers, | . . . 1 " |
| 5. | " | " and lungs as most | |
| | advanced and oldest lesions in a generalised infection, | | 135 cases. |

B. INTESTINAL GROUP.

- | | | | |
|----|--|-------------------------|-----------|
| 1. | Tuberculosis of mesenteric glands alone, | . . . | 1 case. |
| 2. | " | " and intestine, | . . . 1 " |
| 3. | " | " and intestine as old- | |
| | est lesions in generalised infection, | . . . | 15 cases. |

In only 14 cases were the lungs not involved. Tubercular meningitis was present in 69, or 38 per cent, of the children; the youngest was 2½ months, and 9 were under 6 months. Unfortunately, no attempt was made to differentiate between those of bovine and those of human origin.—LEONARD FINDLAY.

DISEASES OF THE SKIN.

A Consideration of Two Outbreaks of so-called Pemphigus Neonatorum. By Andrew Porter Biddle (*Journal of Cutaneous Diseases*, April, 1914, p. 268).—The two outbreaks with which this paper deals occurred in a private woman's hospital and in a public lying-in institution. In these, babies and a certain number of nursing mothers and nurses were affected. The mothers were attacked on the nipples and buttocks, while the nurses were attacked on the exposed parts of the body such as the face, fingers, and ears. In the adults the eruption resembled ordinary impetigo contagiosa, was comparatively mild, and yielded readily to treatment; while in the children the disease was much more extensive and severe, being especially prevalent over the trunk and buttocks. The cases were all typical of pemphigus neonatorum. In some cases there were high fever and severe constitutional symptoms, while in others the temperature scarcely rose above the normal. There were no fatal results. No specific organism was found, though staphylococcus pyogenes aureus was demonstrated in the bullæ. The treatment adopted was blackwash continuously applied, enforced isolation, and careful nursing.—WM. BARBOUR.

Noguchi's Luetin Test for Syphilis. By L. A. Pusey and A. W. Stillians (*Journal of Cutaneous Diseases*, August, 1914, p. 560).—During the past two years the writers employed the luetin test, carried out strictly according to Noguchi's method, in 334 cases—255 cases of syphilis and 79 non-syphilitic cases. In the 79 non-syphilitic cases neither the Wassermann reaction nor the luetin reaction was positive. These cases included tuberculosis, psoriasis, gonorrhœa, pityriasis rosea, urticaria, &c. In 7 cases of primary syphilis with chancre still present the test was negative in all, though 2 gave positive Wassermann. In 104 cases of secondary syphilis, only 21 gave positive results, while the Wassermann was positive in 91 of these, and not made in 7, thus showing that the test is of little value in early syphilis. In 122 cases of late syphilis, in the gummatous stage, there were 68 positive reactions, 60 of which occurred in active cases and 6 in latent cases. In 18 cases giving positive luetin reactions negative Wassermanns were obtained. Of 5 cases of congenital syphilis, 1 case gave a positive luetin reaction and a negative Wassermann. Of 22 cases of tabes and general paralysis, 11 gave a positive result, and in 8 of these the Wassermann was negative.

The writers are of opinion that the luetin reaction is a valuable diagnostic sign of late syphilis, being present in 39 per cent of 144 cases. In the active, primary, and secondary periods of syphilis the reaction rarely occurs.

—WM. BARBOUR.

White Spot Disease. By George M. Mackee and Fred. Wise (*Journal of Cutaneous Diseases*, September, 1914, p. 629).—The writers describe a case of so-called "white spot disease," which was a name applied in 1903 by Johnson and Sherwell, and give a detailed review of different published cases, arriving at the following conclusions:—

1. They consider that all the recorded cases could be divided into two groups, namely, the lichen planus group and the scleroderma group, and that their case belonged to the scleroderma group.

2. They are of opinion that there was no entity that could be called white spot disease, but believed that name should be retained to signify a special type of scleroderma occurring as white spots.—WM. BARBOUR.

PATHOLOGY.

Cholesterin Content of the Suprarenal Venous Blood in Different Experimental Conditions. By René Porak and Alfred Quinquand (*Compt. rend. Soc. de Biol.*, Paris, 1914, vol. lxxvii, p. 368).—These authors have carried out a series of experimental researches to determine whether or not the suprarenals excrete cholesterin into the blood. Two methods of provoking such excretion have been tried—(1) electrical excitation of the secretory nerve of the suprarenal (the splanchnic), and (2) the intravenous injection of a chemical excitant, saponin. The cholesterin content of the blood in the suprarenal veins was estimated, by the colorimetric method of Grigant, before and after the electrical and chemical stimulation respectively, with the following results:—

Electrical stimulation of the splanchnic nerve was without effect on the cholesterin content of the blood in the suprarenal veins, whereas the adrenalin content was increased. The intravenous injection of saponin in small and repeated doses increased the amount of cholesterin, but did not affect the adrenalin content.

The results of splanchnic excitation are explained by the apparently complete absence of nerves in the suprarenal cortex, whereas the medulla, which secretes the adrenalin, is richly supplied.

The authors further observed, in a series of seven comparative estimations, that the cholesterin content of the suprarenal veins was much higher than that of the general circulation (*i.e.*, femoral vein and carotid artery).

—MATTHEW J. STEWART.

Excretion of Cholesterin into the Blood by the Cells of the Adrenal Cortex. By Mulon and René Porak (*Compt. rend. Soc. de Biol.*, Paris, 1914, vol. lxxvii, p. 406).—The authors have investigated histologically the adrenals of two of the animals experimented upon by Porak and Quinquand (see previous abstract), *i.e.*, after the intravenous injection of saponin.

The first was a bitch in which the cholesterin content of the suprarenal venous blood was raised, in fifteen minutes, from .818 to 1.760 mg. per litre, the second a rabbit in which it was raised from .880 to 1.466 mg. per litre. Similar changes were observed in both cases, *viz.*, a diminution of the doubly refracting

lipoid of the cortex, especially in the case of the rabbit, with wasting and shrinkage of the spongiocytes of the zona fasciculata as seen in paraffin sections, and fragmentation of many of the cells of the zona reticularis. In this latter situation there was also noted the presence of lipoid globules within the capillaries, an appearance which the authors interpret as indicating the direct passage of cholesterin from the adrenal gland into the blood.

Taken in association with the chemical findings, these changes are regarded by the authors as an exaggeration of the normal physiological process already described by one of them in the normal animal, and as the morphological expression of the work of the gland.—MATTHEW J. STEWART.

BACTERIOLOGY.

Bacteria Found in Milk After Heating to Various Temperatures.—Quoting from *Johns Hopkins Hospital Bulletin*, September, 1914, the *Dublin Jour. Med. Sc.*, November, 1914, gives the results of Ford and Pryor's investigations. Milk always contains the heat-resistant spores of aerobic and anaerobic bacteria, which by their development can give rise to disagreeable, unwholesome, and dangerous changes in the milk. The aerobic most constantly present is the bacillus *aërogenes capsulatus*. These changes take place in milk which has been heated to any temperature from 65° C. to 100° C., and is kept at any temperature from 22° C. to 37° C., but not at that of the ice box, 4° to 6° C. The spores, however, survive in milk for long periods, even when kept on ice, and can initiate the changes referred to when the temperature of the milk is changed. In heating milk there is a danger zone ranging from 65° C. to 85° C. Between these temperatures the lactic-acid-forming bacilli are destroyed, and hence the inhibiting action which these bacilli exert on the harmful spore-forming bacteria is removed. Further, clotting of milk is so far a protection in that it warns the consumer that the milk is not fresh and is to be avoided. The safest milk is that which has been boiled for ten to thirty minutes, and has been then kept on ice. In such milk the organisms giving rise to explosive and putrefactive changes are destroyed. It is, however, essential that milk heated from 60° C. to 100° C. should be kept on ice, since heated milk is far more liable to decompose than new milk.—E. H. L. O.

Books, Pamphlets, &c., Received.

The Anatomy of the Human Skeleton, by J. Ernest Frazer, F.R.C.S. Eng. With 219 illustrations. London: J. & A. Churchill. 1914. (21s. net.)

Diseases of the Kidneys, Ureters, and Bladder, with Special Reference to the Diseases of Women, by Howard A. Kelly, M.D., LL.D., and Curtis F. Burnam, M.D. Vols. I and II. With 628 illustrations, for the most part by Max Brödel. London: D. Appleton & Co. (50s. net.)

- Aids to Pathology, by Harry Campbell, M.D., B.S.Lond., F.R.C.P. Third edition. London: Baillière, Tindall & Cox. 1915. (Cloth, 3s. 6d. net paper covers, 3s. net.)
- Nursing Ethics: A Lecture, by T. Percy C. Kirkpatrick, M.D. Dublin: University Press. 1915. (1s.)
- Transactions of the Thirty-sixth Annual Meeting of the American Laryngological Association, held at Atlantic City, N.J., 1914. New York: Published by the Association.
- The Early Diagnosis of Heart Failure, and other essays on the Heart and Circulation, by T. Stacey Wilson, M.D.Edin., F.R.C.P.Lond., B.Sc.Edin. With illustrations. London: Smith, Elder & Co. 1915. (12s. 6d. net.)
- Quain's Elements of Anatomy. Eleventh edition. Editors: Sir Edward Albert Schäfer, LL.D., Sc.D., M.D., F.R.S., Johnson Symington, M.D., F.R.S., Thomas Hastie Bryce, M.A., M.D. In four volumes. Vol. IV, Part I: Osteology and Arthrology, by T. H. Bryce. With 247 text-figures and 28 coloured plates. London: Longmans, Green & Co. (12s. 6d. net.)
- Evolution and Disease, by J. T. C. Nash, M.D. Bristol: John Wright & Sons, Limited. 1915. (3s. 6d. net.)
- The Vicious Circles of Neurasthenia and their Treatment, by Jamieson B. Hurry, M.A., M.D. With illustrations. London: J. & A. Churchill. 1915. (3s. 6d. net.)
- The Dispensary Treatment of Pulmonary Tuberculosis, by Hilda Clark, M.B., B.S.Lond. London: Baillière, Tindall & Cox. 1915. (15s. net.)
- Students' Text-Book of Hygiene, by W. James Wilson, M.D., S.Sc., D.P.H. London: William Heinemann. 1915. (8s. 6d. net.)
- The Extra Pharmacopœia of Martindale and Westcott, revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B.Lond., D.P.H. Sixteenth edition. In two volumes. London: H. K. Lewis. 1915. (Vol. I, 14s. net; Vol. II, 7s. net.)
- Squire's Pocket Companion to the British Pharmacopœia, by Peter Wyatt Squire. Second edition. London: J. & A. Churchill. 1915. (10s. 6d. net.)
- The Soldiers' English-German Conversation Book, by Henry Buller. London: T. Werner Laurie, Limited. 1915. (7d. net.)
- Materia Medica Pharmacy, Pharmacology and Therapeutics, by W. Hale White, M.D.Lond., M.D.(Hon.). Fourteenth edition. London: J. & A. Churchill. 1915. (6s. 6d. net.)
- An Index of Symptoms, with Diagnostic Methods, by Ralph Winnington Leftwich, M.D. Fifth edition. London: Smith, Elder & Co. 1915. (10s. 6s. net.)
- Medical Applied Anatomy for Students and Practitioners, by T. B. Johnston, M.B., Ch.B. Containing three full-page plates in colour, and 146 other illustrations in the text. London: A. & C. Black. 1915. (7s. 6d. net.)
- The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Oleum Allii, by William C. Minchin, M.D.Univ.Dublin. Second Edition. London: Baillière, Tindall & Cox. 1915. (5s. net.)
- The Chemistry of Colloids and some Technical Applications, by W. W. Taylor, M.A., D.Sc. London: Edward Arnold. 1915. (7s. 6d. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDED 20TH MARCH, 1915.**

	WEEK ENDING			
	Feb. 27.	Mar. 6.	Mar. 13.	Mar. 20.
Mean temperature, . . .	38·0°	42·3°	43·8°	42·4°
Mean range of temperature between highest and lowest,	10·9°	8·5°	9·8°	12·0°
Number of days on which rain fell,	6	7	2	3
Amount of rainfall, . . ins.	1·63	0·56	0·04	0·36
Deaths (corrected), . . .	441	450	411	437
Death-rates,	21·3	21·8	19·9	21·1
Zymotic death-rates, . . .	3·0	3·5	2·8	3·4
Pulmonary death-rates, . .	6·0	6·2	5·2	5·4
DEATHS—				
Under 1 year,	87	77	89	105
60 years and upwards, . .	126	111	112	106
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	6	10	5	15
Scarlet fever,	5	4	8	5
Diphtheria,	3	6	2	4
Whooping-cough,	45	47	39	44
Enteric fever,	1	2	1	1
Cerebro-spinal fever, . . .	2	4	2	4
Diarrhoea (under 2 years of age),	4	2	4	...
Bronchitis, pneumonia, and pleurisy,	111	110	84	94
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Cerebro-spinal meningitis, .	5	5	3	3
Diphtheria and membranous croup,	36	30	15	23
Erysipelas,	31	38	28	26
Scarlet fever,	105	91	125	106
Typhus fever, . . . . .	...	...	...	...
Enteric fever,	11	10	13	9
Phthisis,	74	75	51	53
Puerperal fever,	2	3	2	5
Measles,*	126	140	187	192

* Measles not notifiable.

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ORIGINAL ARTICLES.

THE PREVENTIVE AND CURATIVE TREATMENT OF
PNEUMOCOCCAL ULCER OF THE CORNEA.

By A. MAITLAND RAMSAY, M.D., F.R.F.P.S.,

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University of Glasgow.

THE patient, whose case forms the subject of this lecture, is a miner, 56 years of age, who was injured while at work by "a spark from the pick" striking his left eye. The accident happened on 28th April, 1914, but it was ten days later before he came to the Ophthalmic Department of the Glasgow Royal Infirmary. He said such accidents were of daily occurrence in the colliery, and consequently when he was hurt he thought little about the matter, but continued at work, in spite of the fact that the eye gradually got more and more uncomfortable, watered freely, and was very intolerant of light. By the end of the second day, however, the suffering was so great that he was compelled to desist. From this time onwards the pain steadily increased, darted from the eye to the top and the back of his head, and at length became so severe and interfered so much with rest and sleep that he was forced to consult a doctor, who advised him to seek expert advice at an eye dispensary without further delay.

When he was examined it was found that there were signs of blennorrhœa of the left lachrymal sac, the upper lid was slightly swollen, the superficial and deep vessels were both greatly congested, and the whole bulbar conjunctiva was red and œdematous. An ulcer, presenting very characteristic features, had formed on the cornea opposite the pupil. It was somewhat crescentic in shape, and while its floor showed only a shallow sloping depression, rough and glistening, its margins were opaque, raised, undermined, and suppurating. At the first glance the cornea, as a whole, appeared transparent, but on more careful examination thin grey lines were seen radiating from the most densely infiltrated border of the ulcer and passing for a greater or less distance into the substantia propria. Where infiltration was greatest it was evident that the ulcer was spreading, while in the margin opposite there were signs of circumscription. Spots of inflammatory exudate were seen in Descemet's membrane, and a considerable hypopion occupied the most dependent part of the aqueous chamber. The pupil was contracted and irregular in outline, and the iris was discoloured and acutely inflamed. As the diagnosis could not be completed without a bacteriological examination, a smear was taken from beneath the spreading edge of the ulcer, prepared on a cover glass, stained by Gram's method, and examined under the microscope, when pneumococci were found in great numbers.

The case is typical of many. A workman receives an eye injury which in itself is trivial, but which through neglect is allowed to become serious owing to the abraded surface of the cornea becoming infected by pneumococci from the tear passages and the conjunctival sac.

In this disease neglect is specially dangerous, because spontaneous recovery rarely takes place; on the contrary, the micro-organisms spread rapidly between the superficial lamellæ, and the ulcer creeps over the whole surface of the cornea. As it increases in size the floor bulges, and may become so thin that Descemet's membrane projects. In more severe cases the whole epithelium and the substantia propria are destroyed, and only the more resistant posterior layer remains. When at length perforation of this takes place, the pneumococci gain access to the interior of the globe. If they

propagate in the uveal tract and in the vitreous, intense inflammation is set up and may involve every tissue of the eyeball. Happily, owing to improved methods of treatment, panophthalmitis is not nowadays a common sequel to hypopion ulcer; but whenever the cornea is extensively destroyed, and especially if perforation and prolapse of the iris have occurred, secondary glaucoma, or partial or complete anterior staphyloma, frequently follows.

The prognosis of serpiginous ulcer is at all times serious. Even a mild case requires several weeks to heal, and as the formation of fibrous tissue always follows inflammation which has caused partial necrosis, a cicatrix is inevitable, the whiteness and the density of the scar depending upon the depth of the destruction of the cornea. As the leucoma is usually situated in front of the pupil, sight is seriously impaired, and can only be imperfectly restored by operation.

The majority of the patients suffer during the most active period of their working life, and as many of them are rendered wholly or partially unfit for their ordinary work, the disease has considerable economic importance. It is difficult to estimate the loss in wages arising from inability to work during the period of illness and from diminished earning power afterwards, but the sum paid in settlement of claims for compensation is more easily calculated. An insurance manager has told me that in the company with which he is connected, serpiginous ulcers of the cornea form from 3 per cent to 4 per cent of all non-fatal underground accidents, and the amount actually paid in compensation for these injuries alone in a single year is little short of three thousand pounds. It is unfortunate that the pecuniary alleviation afforded by the Workmen's Compensation Act tends to make many workmen satisfied with diminished earning ability, and content to bear considerable physical inconvenience. Much of the money could be saved, and what is of more importance, much of the suffering and hardship avoided, if all trivial injuries to the eye were skilfully treated at the time of their occurrence.

The treatment of pneumococcal ulcer of the cornea is, like that of all other diseases, due to infection, both preventive and curative.

I. *Preventive treatment.*—It must never be forgotten that the pneumococcus, which is the cause of the ulcer, is, when it attacks the eye, as destructive to sight as it is dangerous to life when it invades the lung. Whenever it has declared itself, therefore, expert assistance becomes at once necessary. Prophylaxis is, however, a different matter, and lies almost entirely in the hands of the general practitioner who, if well informed as to the ætiology of the disease, will fully realise his own special responsibility in the matter, and recognise the importance of the following recommendations:—

1. Suppuration of the tear passages is a frequent source of infection of an abraded cornea; therefore, the general practitioner should advise immediate extirpation of the lachrymal sac in all patients suffering from dacryocystitis, if their occupation exposes them frequently to risk of injury to the eye.

2. The chief sufferers from serpiginous ulcer belong to the labouring classes, who are very prone to neglect slight eye injuries; therefore, the general practitioner should do all in his power to warn people of this class of the dangers arising from neglect, and try to teach them to seek medical advice with as little delay as possible. It is most important that all workmen be made to understand the serious nature of pneumococcal ulcer, and much good in that direction might be accomplished if, in the ambulance lectures delivered to the employees of public works, the lecturer gave some general instructions regarding the care of the eyes, and warned the men that no injury to the eye is so trivial that it can be neglected with impunity.

3. After infection has occurred the ulcer may spread with great rapidity, and all chance of saving sight be lost within a few days. Whenever, therefore, the general practitioner is consulted by a patient suffering from serpiginous ulcer, he should restrict himself to giving first aid, and then, with as little delay as possible, send the patient to a specialist. First aid in such a case consists in washing out the conjunctival sac with a warm solution of boracic acid, instilling a few drops of a 2 per cent solution of cocaine, examining the eye carefully by focal illumination, removing any foreign body from beneath the eyelids or from the surface of the cornea, applying an ointment of 1 per cent atropine, 2 per cent cocaine, and 3 per

cent iodoform, and covering the eye with a carefully adjusted compress and bandage. The patient ought then to be sent to a specialist, for it cannot be repeated too often, or urged too strongly, that the sooner the eye is treated by an expert the more satisfactory will be the result. When left to themselves, the patients rarely seek the advice of an ophthalmic surgeon until days, or possibly weeks, after the onset of the disease, and by that time sight may be irreparably damaged. It is true that many of these patients say that in the interval they have been using a lotion (which may or may not have been prescribed by a doctor), but that cannot in any way be regarded as efficient treatment of such a dangerous disease as serpiginous ulcer.

II. *Curative treatment.*—When the patient passes to the expert, a bacteriological examination ought at once to be made to confirm the diagnosis, and the tear passages should be examined carefully, so that if any suppuration be detected treatment may be begun by syringing, and it may be by extirpating the lachrymal sac. When the diagnosis has been established, and the risk of re-infection from dacryocystitis prevented, the indications for further treatment are to give the eye complete rest, to relieve the pain, to destroy the infecting micro-organisms, to protect the eye from further injury, and to promote the rapid healing of the ulcer.

The patient ought to remain in bed, with all bright light excluded from the room, and atropine must be instilled from the very outset. Locally, it soothes the nerves and diminishes vascular congestion, while, by dilating the pupil and paralysing the ciliary muscle, it ensures physiological rest for the eye. The effect of atropine upon the pupil is one of the surest guides in prognosis, for the more quickly the iris responds to the influence of the mydriatic the more favourable will be the course of the disease. When the ulcer is about to perforate, the use of eserine is preferable to that of atropine; but, with that exception, the former drug has in serpiginous ulcer a very limited sphere of usefulness, and almost invariably it is the latter which should be employed. Great benefit is obtained from the application of fomentations. Moist heat, by diminishing congestion, and thereby reducing intra-ocular tension,

speedily relieves pain; but a fomentation to be effective must be properly applied, and it should be repeated every two or three hours. It may be made more soothing by using an infusion of chamomile flowers, to a pint of which may be added a teaspoonful of Battley's sedative solution of opium.

The chief end of treatment, however, is to compass the destruction of the pneumococci in the substance of the cornea. Many antiseptics have been recommended for that purpose—pure phenol, tincture of iodine, bichloride of mercury, and sulphate or chloride of zinc being the most popular. The ordinary antiseptic, however, expends its energy upon every form of protoplasm with which it comes in contact, and, consequently, may be as destructive to the tissue of the cornea as it is to the invading microbes. For that reason treatment in infective diseases of the eye aims not so much at killing the bacteria directly as at stimulating the natural defences of the body. Phagocytosis, however, depends in great measure on the supply of protective substances the tissue is able to produce, and although the cornea does share to some extent in the general immunity of the body, it is an avascular structure, and, consequently, the destruction of the germs attacking it is neither so rapid nor so thorough as in other tissues possessing a better blood supply. The bacteriotropic substances elaborated by the body have such restricted access to the cornea that, in actual practice, serum and vaccine therapy can only play a subordinate part in the treatment of pneumococcal infection of that structure. Roemer,¹ who strongly advocates specific serum and vaccine therapy, employs it only in conjunction with local remedies. He also advises that it be used at the earliest possible moment, and warns us not to expect it to work any miracle of healing.

What is wanted is a drug which is at one and the same time poisonous for the pneumococcus and non-poisonous for the tissues of the body, or, as Wright² says, it must be monotropic for the protoplasm of the pneumococcus. Professor Morgenroth³ has recently brought forward such a drug in ethylhydrocuprein, and, as Wright points out, his experiments have furnished the first demonstration of the possibility of preventing and curing a bacterial, as distinguished from a protozoal or spirochætal, infection by the administration of a drug. Morgenroth's

researches were undertaken to elucidate the pharmaco-therapy of pneumonia. He experimented with derivatives of quinine, and found that ethylhydrocuprein and its salts exerted a bactericidal influence specifically upon the pneumococcus, and had only a very slight effect upon other micro-organisms. Early in the course of his investigations he expressed the opinion that the drug ought to prove of great value in the treatment of serpiginous ulcer of the cornea, and encouraged his ophthalmic colleagues to put it to a clinical test. A. Leber,⁴ at the meeting of the Heidelberg Ophthalmological Congress of 1913, was the first to record successful results, and, since his communication, Goldschmidt,⁵ Schur,⁶ Darier,⁷ and others have reported favourably on the drug, which from all accounts now bids fair to dominate the therapy of pneumococcal ulcer of the cornea.

Ethylhydrocuprein has been used in my practice since the autumn of 1913, and thirty-four cases of serpiginous ulcer have been treated. My personal experience amply confirms the favourable reports already published. Provided the pneumococcus is the infecting organism, cases treated by ethylhydrocuprein run a much shorter and conspicuously more favourable course than did those dealt with in earlier days by the well-recognised methods formerly in use. After recovery there is only a thin cicatrix marking the site of the ulcer, and, consequently, either iridectomy or tattooing is much less frequently required in order to improve acuity of vision.

The technique of treatment is simple. Ethylhydrocuprein hydrochloride, also known by the trade name of optochin, a white salt readily soluble in water, is employed in 1 per cent or 2 per cent aqueous solution. Before it is used, the floor of the ulcer should be thoroughly washed with a lotion—containing chinosol (1 in 4,000) or quinine hydrochloride (3 grains to 1 fluid ounce), diluted with an equal quantity of warm water—and the boundaries of the ulcer should be demarcated by staining with an alkaline solution of fluorescein. This done, a swab of sterilised cotton wool—sufficiently large to cover the whole of the ulcerated surface, and saturated with a 1 per cent aqueous solution of the optochin—should be applied to the ulcer, and kept in firm contact with its floor and margin for about two minutes. Should the patient be sensitive, it is well

to instil cocaine drops beforehand, because the application of the optochin causes sharp burning pain, lasting from five to ten minutes. That irritation, however, soon lessens, and by the end of fifteen minutes there is complete anæsthesia of the cornea, which will last for fully half an hour. To begin with, these applications should be repeated two or three times daily—the good effect being maintained by instilling a few drops of 1 per cent solution of optochin every hour during the day, while, during the night, a 1 per cent optochin and atropine ointment may be applied as often as possible without interfering with sleep. Ethylhydrocuprein is often applied by simple instillation alone, but the use of the swab and the hourly instillations combined will be found much more efficacious and satisfactory.

The grateful anæsthesia following the first application develops gradually, and is kept continuous by the repetitions. Relief from pain is therefore prompt and effectual, and in two or three days the ulcer is clean, all infiltration having disappeared from its margins, the hypopion has become absorbed, and the pupil begins to dilate. After this, the applications of optochin need not be so frequent; but as there is, until healing becomes thoroughly established, considerable risk of re-infection, the instillations should be continued, and repeated three or four times a day until all danger is past. Fresh infection is always accompanied by recurrence of pain, and is in many instances due to carelessness, either on the part of the patient himself or of those in charge of his case. Rest in bed and the careful application of a bandage until the ulcer has healed completely are essential parts of the treatment, and if, after sepsis has been overcome, these precautions be rigidly followed, there will be no relapse. Rapid healing will be promoted by the protection afforded to the eye by the bandage or by a shield, and cicatrisation is hastened by the use of 5 per cent scarlet red ointment, or by covering the ulcer, after it is thoroughly disinfected, with a flap of conjunctiva.

The success of the treatment by ethylhydrocuprein depends upon the fact that the pneumococcus is the infecting organism, and that it is possible to kill the microbe in the substance of the cornea without injury to the cornea itself. Preliminary bacteriological examination is therefore essential, because it is very difficult to distinguish by clinical signs alone a serpiginous

ulcer due to the pneumococcus from one the result of infection by other micro-organisms, and, as has already been said, optochin has little or no effect on microbes other than the pneumococcus. In cases of mixed infection it is, therefore, well to apply pure phenol, or 20 per cent solution of sulphate of zinc, in addition to optochin, and this combined treatment is often attended by very satisfactory results.

It happens occasionally that healing proceeds very slowly or improvement may come to a standstill, even in a case in which the pneumococcus has been demonstrated to be the cause of the ulcer. Under such circumstances it is well to be sure that the optochin solution is freshly prepared, for the drug loses its efficacy so quickly that solutions more than a week old ought not to be employed. Leber has suggested that in some instances where the results are disappointing the pneumococci have become resistant to ethylhydrocuprein, and that is why, when recrudescence takes place, the relapse is not readily influenced by the treatment. Whenever, therefore, in a case that was progressing well to start with, pain and other symptoms of irritation recur and the ulcer continues to spread, the actual cautery should, without delay, be applied carefully but thoroughly.

From what has been said, it will be clear that the two essentials for the success of chemo-therapy in pneumococcal ulcer of the cornea are, first, the necessity for beginning treatment at the earliest possible moment; and, second, the need for intensive applications of optochin during the first few days of the treatment.

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THE PROGNOSIS AND TREATMENT OF CONGENITAL SYPHILIS, WITH A PLEA FOR NOTIFICATION.

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RECENT work on congenital syphilis has demonstrated clearly, with the aid of the Wassermann reaction, the wide distribution, the protean manifestations,¹ and the far-reaching effect of this disease. A large proportion of still-births and miscarriages are due to syphilis, and very many children die in early infancy as a result of severe syphilitic infection. This is well shown in a recent analysis by Professor Williams, of Baltimore,² of 10,000 consecutive pregnancies in which there resulted 705 still-births, 26 per cent of which were due to syphilis. In addition, he found that 3·5 per cent of the children born alive were definitely syphilitic.

It has also been shown with the help of the above-mentioned biological test that many pathological conditions—such as congenital heart disease, spastic diplegia, and mental deficiency—have, in quite a large proportion of the cases, a syphilitic basis.^{3,4} The treatment, and especially the efficient treatment, of congenital syphilis is thus a matter of prime importance, and the present paper is a synopsis of the results which we have obtained with different methods during the past two years at the Glasgow Sick Children's Dispensary.

1. *Cases treated with mercurial inunction and in breast-fed children the administration of pot. iod. and hyd. perchlor. to the mother.*—Very many cases were treated in this way, but the majority were lost sight of, and it is only possible to quote the results in 18 cases, 14 of whom were under 3 months of age. Unfortunately, in none was the Wassermann reaction performed, but they were all very typical examples of the disease. Six of the children became to all appearances well, and 12 died, giving

a mortality-rate of 66 per cent for all the cases, and of 71 per cent for the children under 3 months.

Other workers have found an equally high death-rate in cases treated with mercury alone. Welde,⁵ of Leipzig, in cases under 3 months of age had a mortality-rate of 77 per cent in the children treated in hospital, and of 52 per cent in those treated in their own homes. Hyde, in 1909, records for cases under 1 year of age a mortality-rate of 95 per cent, and Werner, Freund, and Hochsinger, also for cases under 1 year, report mortality-rates of 77 per cent, 54 per cent, and 36 per cent respectively.⁶

2. *Cases treated with joha and neosalvarsan by intramuscular injections and mercurial inunction.*—Nine cases, varying in age between 4 months and 10 years, were treated in this way. Of the 2 cases under 1 year both died from broncho-pneumonia six months after the cessation of the injections. In 3 cases—14 months, 6 years, and 6 years old respectively—the Wassermann reaction became negative, and was still negative fourteen, fourteen, and sixteen months after the cessation of the injections. These children received five to seven injections of 0.1 to 0.45 grms. at weekly intervals. In three cases there was great improvement in the symptoms, but the Wassermann reaction remained positive although the children had received four to five injections of 0.3 to 0.5 gm. at weekly intervals. One case was lost sight of.

We ultimately discarded the intramuscular injection of the drug on account of the great pain which it caused, and the necrosis and sloughing which frequently ensued at the seat of injection.

3. *Cases treated with neosalvarsan by intravenous injection and mercurial inunction (43 cases).*—In the younger children the veins of the scalp were used as the site of injection, and concentrated solutions of the drug were employed—0.05 to 0.2 or 0.3 gm. neosalvarsan being dissolved in 3 to 5 c.c. normal saline. In the case of older children the injection is best done into the external jugular vein. Of these 43 cases, 22 showed great improvement; in 16 the Wassermann reaction became negative, and the children have remained well; 4 which were improving under treatment were lost sight of; and 17 died. In only 1 case could death be ascribed to the injection, most of the children dying from broncho-pneumonia, whooping-cough, or

measles some time after treatment had been stopped. One or two of the cases were extremely severe examples of the disease, and after improving for a day or two under treatment, died apparently as a direct result of the syphilitic toxæmia induced by the death of the spirochætes consequent on the injection of salvarsan. It was our practice to administer the injections once weekly, but in view of the above we are inclined to advise the injection of very small doses in the case of very young and severely infected infants, *e.g.*, 0·025 grm., twice weekly.

Twenty-two of these 43 cases were under 3 months of age, and, including all cases that died within twelve months of the last injection, showed a mortality-rate of 45 per cent. This compares very favourably with the mortality-rate of 71 per cent in the cases under three months treated with mercury alone.

4. *Antenatal treatment: Treatment of pregnant women by the intravenous injection of neosalvarsan and mercurial inunction.*—As this portion of the work is of special interest we will quote in detail the clinical histories of the cases (seven in all) we have so far treated.

CASE I (Mrs. M.).—Five previous pregnancies—no miscarriages. Fifth child definitely syphilitic. Wassermann reaction strongly positive in mother and child.

21st February, 1914.—Seven months pregnant. Mercurial inunctions commenced.

22nd February.—0·6 grm. neosalvarsan intravenously.

1st March.—0·6 grm. neosalvarsan intravenously.

8th March.—0·6 grm. neosalvarsan intravenously.

22nd March.—0·9 grm. neosalvarsan intravenously. After this injection patient was very ill for several days.

7th April.—Wassermann reaction still positive but weak.

25th April.—Child born.

22nd June.—Wassermann reaction in child (aged 8 weeks) absolutely negative, and in mother positive but very weak. Child in excellent health.

10th December.—Baby, aged 7 months, breast fed, in perfect health, has had no specific manifestations.

8th March, 1915.—Baby, aged 11 months, walking, seven teeth. Wassermann reaction negative.

CASE II (Mrs. W.).—Three previous pregnancies. First, still-born; second, apparently healthy child of $4\frac{1}{2}$ years; third, case of congenital heart with saddle nose. Wassermann reaction positive in mother and second and third children.

11th February, 1914.—Mercurial inunctions commenced. Five and a half months pregnant; 0.6 gm. neosalvarsan intravenously.

25th February.—0.6 gm. neosalvarsan intravenously.

11th March.—0.6 gm. neosalvarsan intravenously.

9th April.—Wassermann reaction negative.

19th April.—0.9 gm. neosalvarsan intravenously. Patient was usually troubled with headache and vomiting after the injection, but these were specially severe after the last.

19th May.—Wassermann reaction still negative.

24th May.—Baby born.

13th June.—Wassermann reaction in baby (aged 3 weeks) absolutely negative.

11th July.—Child still absolutely healthy, sleeps well, 10 lb.

21st February, 1915.—Wassermann reaction in child (aged 9 months) negative.

CASE III (Mrs. M'C.).—One previous pregnancy; this child was definitely syphilitic, and both mother and child gave positive Wassermann reactions.

21st January, 1914.—Six and a half months pregnant. Mercurial inunction instituted; 0.3 gm. neosalvarsan intravenously.

10th February.—0.6 gm. neosalvarsan intravenously.

25th February.—0.6 gm. neosalvarsan intravenously.

19th March.—0.3 gm. neosalvarsan intravenously.

19th May.—Baby born.

13th June.—Baby, aged $3\frac{1}{2}$ weeks, weighs 7 lb. 14 oz., and is apparently in good health; no evidence of syphilis. Wassermann reaction absolutely negative. Wassermann reaction in mother borderland case.

27th June.—Child continues well—9 lb.

11th July.—Child still well—10 lb. 12 oz.

7th October.—Child still well—14 lb. 6 oz.

8th March, 1915.—Child aged 10 months, in good health, never any manifestations of syphilis. Wassermann reaction negative.

CASE IV (Mrs. M'N.).—Four previous pregnancies. First (boy) died at 10 months from bronchial asthma; second (girl) died at 8 months; third (boy) alive, Wassermann reaction positive; fourth (boy), severe case of congenital syphilis, treated with neosalvarsan intravenously and mercurial inunction, but developed measles, and died one month after the last of a series of eleven injections.

30th September, 1914.—Seven months pregnant. Wassermann reaction positive; mercurial inunction commenced; 0·3 grm. neosalvarsan intravenously.

7th October.—0·3 grm. neosalvarsan intravenously.

17th October.—0·3 grm. neosalvarsan intravenously.

21st October.—0·3 grm. neosalvarsan intravenously.

10th December.—Baby born.

12th March, 1915.—Child, aged 3 months, presents no evidence of syphilis, and Wassermann reaction is negative. Child for past month has suffered from bronchitis, and has lately developed pneumonia.

24th March.—Died; *post-mortem*, broncho-pneumonia; no evidence of syphilis.

CASE V (Mrs. K.).—Three previous pregnancies. First child had a rash on body, and died at 2 months; second was an eight months' child, and only lived one month; third was a typically specific child, which died at 8 weeks. Wassermann reaction positive in mother.

23rd April, 1914.—Two months pregnant. Mercurial inunction commenced; 0·6 grm. neosalvarsan intravenously.

13th May.—0·6 grm. neosalvarsan intravenously.

27th May.—0·6 grm. neosalvarsan intravenously.

9th June.—0·6 grm. neosalvarsan intravenously.

13th June.—Wassermann reaction positive.

1st July.—0·6 grm. neosalvarsan intravenously.

2nd November.—Baby born.

8th March, 1915.—Very healthy child; breast-fed; no evidence of congenital syphilis; Wassermann reaction negative.

CASE VI (Mrs. S.).—Seven previous pregnancies. Last child was typically syphilitic and gave a positive Wassermann reaction, and was treated with mercurial inunction and a series

of eleven intravenous injections of neosalvarsan; one year after last injection gave a negative Wassermann reaction.

22nd April, 1914.—Two months pregnant; Wassermann reaction positive. Mercurial inunction commenced; 0.6 gm. neosalvarsan intravenously.

6th May.—0.6 gm. neosalvarsan intravenously.

20th May.—0.6 gm. neosalvarsan intravenously.

3rd June.—0.6 gm. neosalvarsan intravenously.

8th June.—Wassermann reaction negative.

1st July.—0.6 gm. neosalvarsan intravenously.

10th December.—Baby born.

10th March, 1915.—Baby, aged 3 months; no evidence of congenital syphilis; Wassermann reaction negative in mother and child.

CASE VII (Mrs. R.).—Six previous pregnancies. Only one child living, and gave a positive Wassermann reaction. Last child was under our care for typical congenital syphilis, and was treated with neosalvarsan, but developed pneumonia and died.

10th February, 1914.—Two months pregnant; Wassermann reaction positive; pot. iod. and hyd. perchlor. prescribed.

4th March.—0.6 gm. neosalvarsan intravenously.

18th March.—0.6 gm. neosalvarsan intravenously.

1st April.—0.6 gm. neosalvarsan intravenously.

15th April.—0.6 gm. neosalvarsan intravenously; Wassermann reaction positive; ung. hyd. prescribed.

22nd May.—0.3 gm. neosalvarsan intravenously.

27th May.—0.3 gm. neosalvarsan intravenously.

3rd June.—0.3 gm. neosalvarsan intravenously.

8th June.—Wassermann reaction negative.

12th June.—0.3 gm. neosalvarsan intravenously.

25th July.—Baby born.

25th November.—Child, aged 4 months, and absolutely healthy.

Although the number of cases which we have treated in this way is admittedly small, the results are distinctly encouraging. Concentrated solutions of the drug were always used, as much as 0.6 gm. and, in two instances, 0.9 gm. of neosalvarsan being

dissolved in 5 or 10 c.c. of saline. In no case was the course of the pregnancy interrupted, and the mothers did not seem to suffer much from the treatment. On the occasions when 0·9 gm. was given there were severe headache, and sickness, and vomiting for a matter of twenty-four hours, and in one case for several days after the injection; but this we ascribed to the large dose, and we believe that such bad effects can be avoided by limiting the amount of the drug given at any one time. Probably 0·3 gm. is a sufficient dose, and should be repeated weekly until a negative Wassermann reaction is obtained. The mothers, as a rule, expressed themselves as feeling better during these than any of their previous pregnancies. So far as our experience goes, equally good results were obtained whether treatment was commenced as early as the second month or delayed till the seventh month of pregnancy. This, in all probability, is to be accounted for by the fact that many syphilitic infants are infected during parturition, the mischief remaining local in the placenta during the whole course of gestation. It is this uterine localisation of the disease which accounts for the absence of clinical manifestations in many of the mothers of syphilitic children. Baisch, Trinchese, and Weber,⁷ working in Doderlein's clinique, found that in the case of every syphilitic child the placenta—both the foetal and maternal portions—contained spirochætes, and, in common with Rietschel, are inclined to the opinion that the spirochæte always travels to the child from the placenta. Most authorities agree that during gestation the spirochæte may travel along the umbilical cord and infect the foetus, but this, according to Rietschel, is less frequent than infection by emboli set free during parturition. It would, therefore, seem exceedingly likely that in the treatment of pregnant women the salvarsan gets easily at the very vascular placenta and destroys the contagium vivum, thus considerably lessening the risk of embolism from living spirochætes.

It is evident from the foregoing results that congenital syphilis, even when vigorously treated shortly after birth, is very difficult to cure, and that the mortality is high. Many of its manifestations, although improvement may result from treatment, are incurable, and entail great misery and suffering on the victims of this disease, additional economic burdens on

the community in general, and a lowering of the physique of the race. Of all the methods, antenatal treatment with salvarsan would seem to give much the best results, so far as can be judged by an as yet limited experience. This method has, in the hands of several French clinicians, given equally good results—Sauvage reporting 93 per cent, and Bourret and Fabre 100 per cent of cures.⁸ For its proper execution, however, notification in some form or other would be very advisable—if not, indeed, essential—and, in spite of the many arguments that have been raised against the introduction of such a measure, we are of opinion that syphilis ought to be added to the list of notifiable diseases. We take up this stand with the less hesitation, since such distinguished members of the profession as Sir William Osler and Sir Victor Horsley have already expressed a like view.

Most writers, when discussing the question of compulsory notification of syphilis, seem to consider the chief end of such a proposal the obtaining of definite information regarding the prevalence of the disease. If knowledge on this point is all the good that is expected to accrue from such an innovation, then it must be conceded that the resulting hardships and disadvantages to many sections of the community would far outweigh the value of any information of this nature; but we advocate notification because we consider that it would make for more efficient treatment, and would diminish to an enormous extent the ravages of the disease in the generation of to-morrow. More efficient treatment would at the same time cause a diminution of infective individuals. If we believe that the long list of diseases—locomotor ataxia, general paralysis, mental deficiency, epilepsy, spastic diplegia, aneurysm, chronic endocarditis, and congenital heart disease—are even in part due to syphilis, then it is incumbent on us to do all in our power to reduce the frequency of the malady. We all know only too well that syphilis is exceedingly rife, and, to our mind, it does not materially matter whether it is ultimately ascertained that there are 300,000 or 600,000 cases yearly in Great Britain. The chief point is that with proper treatment much of it could be cured, and its slaughter of infants and children to a very great extent avoided.

By the notification of all cases of miscarriages and stillbirths

due to syphilis, and of congenital syphilis in infancy (and all these conditions regularly come within the purview of the doctor), the treatment of the parents could be properly controlled, and future healthy progeny almost certainly guaranteed. This in itself would be a great gain.

We are quite prepared to admit that there are serious objections to the adoption of such a measure. Syphilis is different from all other notifiable diseases in that its acquisition entails, at least in the public mind, a moral declension. This might, as many suggest, lead to concealment of the affection, and the resorting to unqualified practitioners and quacks, who are much less able to carry out the proper treatment. Trouble of this sort, however, could be easily overcome by adopting Sir Donald MacAlister's advice to make unqualified practice illegal. We quite see, too, how such a measure might occasionally disturb the domestic harmony, but, from a fairly extensive experience in the treatment of mothers and children, both in out-patient departments and in their own homes, we have become convinced that desire to get the children cured, and delight at the prospect of healthy progeny after a series of miscarriages and stillbirths, are so great as to obliterate all else from the parents' minds. After all, the cause of the trouble is, in most instances, a thing of the past, which occurred in all probability before there was a home, and women, who, it must be admitted, will have the most frequent cause to complain, are likely to forgive the failings of their partner's youth. The occasions on which family dissension would occur would probably be so few as to be far outbalanced by the diminution of misery that would result from proper treatment of the disease.

We feel confident that were the public better informed regarding the true death-roll claimed by this disease, little objection to its notification would be raised. Education of the public on this point is urgently required, but not the type of education that has often been suggested. At present there is much talk of giving instruction to mere children, and to young boys and girls, on what is described as "sex hygiene." What exactly this subject is intended to embrace we do not quite understand. So far as youth is concerned, the moral aspect of the question is the all important one. Lads and

girls know instinctively that promiscuous sexual intercourse is wrong and immoral, and for those who are older, and whose moral sense is blunted, the fear of infection may, and does, act as a deterrent; and we believe that notification would owe a certain amount of its success to the fear of exposure. The idea has also been suggested that the need for early treatment should be taught to boys at public schools and universities, and to lads and girls in technical employments. This, of course, assumes that the disease can be diagnosed early. The infected male may know comparatively early when he is the subject of the disease, but assuredly it is not so with the female. If there is one fact that stands out more prominently than any other in the subject of congenital syphilis, it is the rarity with which the mothers of definitely syphilitic children present manifestations of the mischief. As a rule, the only evidence of their infection is the positive Wassermann reaction and the syphilitic offspring.

By all means teach the public the truths we ourselves have learned about the far-reaching effects of the disease and its amenability to proper treatment, but do not make the infant mind morbid by instilling prematurely facts regarding the nature of sex and sex physiology. To our mind, they will learn all that they can understand about these matters soon enough, and the parents are their proper instructors. The public, however, must be taught that it is not the disease itself—or at least not what they have been accustomed to look upon as such—that kills, but conditions which it engenders long after the primary infection has been forgotten, and instruction of this type can only be properly given by medical men in a position to talk with authority. Did the disease claim all its victims during the early stages, as small-pox and plague, it would have been made a notifiable disease long ago—if not, indeed, treated in a fashion similar to leprosy. Moreover, we should not forget that although gonorrhœa itself is not notifiable, gonorrhœal ophthalmia is. The recalling of the primary infection to the patient's memory, often the result of a moral declension, will, no doubt, form one of the most serious barriers to the much needed reform; but did the public appreciate, as medical men do, that many cases of insanity, nervous disease, heart disease, and much of our infantile

mortality and premature senility are due to syphilis, and that with proper treatment its prevalence could be reduced and its death-rate minimised, they would only too willingly allow of any measure which would rid them of the greatest of all plagues.

We must have notification—confidential, if you like—but notification of some sort if we are going to tackle this disease seriously. After all, is there any radical difference between the compulsory and confidential forms? The knowledge that a certain individual is infected will only be shared by him with his medical adviser, as at present, and a third impartial official, the medical officer of health. If the patient will consent to treatment there is an end to the matter; but if not, the health authorities must be in the position to enforce it, and where the patients cannot afford the necessary treatment, they must be supplied with it. This would entail the setting up of dispensaries and night clinics, and also the institution of medical visitors, who would carry out the treatment at home when this was thought desirable. No doubt such a scheme would cost the community a considerable amount, but the expenditure would be well worth while if it resulted, as it most certainly would, in a healthier race, and in the removal from the rates of a large number of physical and mental wrecks.

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CHOREA.

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Eastern District Hospital, Glasgow.*(Continued from p. 267.)*

Review of a series of sixty-four cases of chorea.—It is difficult to give within the limits of a short review the outstanding clinical features of a series of sixty-four cases. The value of any such review must depend on the method of presenting it. A short summary of the cases, such as I have prepared for my own use, would be of little interest or use to those who had not seen and examined the patients; a statistical extract with reference to age of incidence, nature of symptoms, complications, the relation to neuropathic inheritance and rheumatic diathesis might be of some interest, more especially as affording a comparison with similar extracts by previous observers. But to confine the review to such a limited outlook involves two disadvantages. In the first place, in the series before us the associated conditions of rheumatism, neuropathic diathesis, functional and organic nervous disorder are so complicated that any statistical analysis which I personally could make would deprive the review of the main significance which the cases have suggested; and, in the second place, the series itself has been collected from sources which have not been at the disposal of previous observers on the subject, and on that account a comparison and contrast with previous statistical observations might be misleading. The cases under review have been collected from the wards of a general hospital (the Victoria Infirmary of Glasgow), from wards specially devoted to the observation and treatment of nervous and mental diseases at the Eastern District Hospital, Glasgow, and from cases which have been brought under my notice under the Mental Deficiency Act; in the latter group are included cases of chronic chorea—cases

of long-standing disability where the chorea is superimposed on organic brain defect, constitutional or acquired.

The method which will be followed in discussing the series will involve the selection and description of particular cases, whose history, symptoms, and evidence of associated disease are likely to have a bearing on the question of pathogenesis and treatment when that is discussed. I am confirmed in my preference for dealing with the subject in this manner by a perusal of the literature, where it is found that the most instructive and suggestive reviews are those in which cases are described in fuller detail, and in which certain rarer phenomena are emphasised in the elucidation of the disease.

A. AVERAGE TYPES OF CHOREA SEEN IN GENERAL HOSPITAL.

Chorea (Case VI, V.I.,G.).—Margaret L., aged 10 years, was admitted to hospital suffering from involuntary movements of the arms and legs, and also difficulty in speech. The trouble was first noticed a month earlier in the form of shaking and twitching of the right hand. This increased into the whole arm, and subsequently the right leg was involved, and about a week later the left side of the body also participated in the involuntary movements. Subsequently the face became affected, and speech became abnormal. There has also latterly been difficulty in swallowing food. Her mother attributes the condition to a fright she got on the street about a month before the movements in the hand were noticed.

Previous health.—Her previous health was good. She had had no illness except measles. Her mother says that she has always been nervous and highly strung. She has never had rheumatism or sore throats.

Family history.—Her mother is nervous and excitable. Her two sisters are nervous, but there is no family history suggesting a definite neurosis or psychosis.

Condition on admission.—She is pale and anæmic, restless, and emotional. Her arms seem never to be at rest. She is continually grimacing, and occasionally she weeps. It is impossible to concentrate her attention for any length of time. Her pupils are dilated, her skin reflexes are normal, and

sensation is normal. The deep and superficial reflexes are exaggerated. Her cardiac dulness is within normal limits, and the heart's sounds are pure. There is a suspicion of an occasional systolic murmur midway between the apex impulse and the pulmonic area. The pulse is irregular. The irregularity would appear to be associated with the respiratory irregularity incident to the choreic involvement of the respiratory muscles. The tongue is slightly coated, but the alimentary system shows no other evidence of derangement. The urine is normal, and the temperature is 100°.

Condition during residence.—On admission she was put on arsenic. During the first week she was emotional and excitable, and the choreic movements did not visibly diminish. She wept on the slightest provocation. In the second week of residence she was given, in addition to the arsenic, 5 grains of aspirin four-hourly and warm baths twice daily. Her condition improved gradually, and in a month she was perfectly well. Her reflexes were at this time slightly exaggerated. She was bright and intelligent and took a lively interest in her surroundings. It was possible to concentrate her attention. Her heart appeared to be normal, and her pulse, which numbered 80 per minute, was regular.

Condition a year later.—She is still somewhat anæmic, although her general bodily condition is much better than it was when she was in hospital. She is nervous and excitable, and when asked to answer questions which are too difficult for her, slight jerky movements are occasionally noticed in the right arm. Her heart is normal. The reflexes are slightly exaggerated. She is bright and intelligent. Her mother says that during the past year she has occasionally been subject to fits of weeping, and on one or two occasions she has noticed slight movements on the right side, but these have only been transient.

Chorea (Case VIII, V.I., G.).—Mary S., aged 9½ years, was admitted to hospital suffering from violent movements of the arms and legs and head. The condition began in the arms three and a half months previously. When 7 years of age she had her first attack of chorea. At that time the illness began with slight movements in the right arm, and from there had spread to the other limbs, but did not involve the head,

She was kept from school for two months, and at the end of that period the movements had disappeared. So far as her mother knows there is no definite cause to which the attack can be attributed. At the age of $8\frac{1}{2}$ years there was a recurrence, and this lasted for about six weeks.

Previous health.—Previous health has been good except for these attacks of chorea. There is no history of rheumatism. She has always been of a very excitable disposition.

Family history.—She has a cousin who suffered from chorea. Her aunt is in an asylum. Her mother suffers from asthma, and a sister has had rheumatic fever.

Condition on admission.—The movements are very violent. She tosses about in bed and is scarcely ever at rest. She has a difficulty in speech and in swallowing. Her heart is slightly enlarged towards the left. There is a loud systolic murmur at the apex, and it is of a soft, blowing character, and is conducted into the left axilla. The first sound at the apex has a slapping quality. The pulse is regular in force and rhythm, and numbers 100. On account of the violence of the movements the nervous reflexes are difficult to examine. The pupils are dilated and respond to light. The tongue is coated, but there is no other evidence of alimentary derangement. The urine is normal, and the temperature is 99.8° .

Condition during residence.—During the first week of residence the movements were very violent. She was put on arsenic and given warm baths twice daily. This treatment did not obviously moderate the condition. After ten days residence she was put on aspirin, 5 grains four-hourly, and after a week of this treatment her condition began to improve. She was dismissed at the end of two months comparatively well, although still showing slight movements in the arms. There was a loud systolic murmur at the apex at the time of dismissal, and it was conducted into the axilla. The pulse numbered 80 per minute and was of fair tension. Her reflexes were exaggerated. She was still excitable and emotional. Her intelligence was poor for her years, and her capacity for attention was below the average.

Condition six months later.—When seen six months later she was still excitable and showed slight movements, especially in the left arm, when excited in attempts to answer questions

which were too difficult for her. Her cardiac condition remains the same as at time of dismissal. Her mother said that she was excitable and at times difficult to manage, and required much more attention than the other children.

Chorea (Case XIII, V.I., G.).—Robert L., aged 12 years, was admitted to hospital suffering from extreme restlessness and violence, and jerky movements of the whole body. These movements were not convulsive in character, but were irregular and affected the various parts of the body in an inco-ordinated manner. The condition from which he suffered on admission had been present for two days.

History of illness.—He had been in good health up till six weeks before admission. At that time he had an attack of acute rheumatism, with high fever, and involvement of the ankles, knees, wrists, and elbows in succession. He was treated with salicylate of soda, and in a fortnight the fever and pain disappeared. He had, however, a slight systolic murmur at the apex. A fortnight subsequently the pains returned in the wrists, and at the same time he developed a left pleural effusion. About a fortnight after this involuntary movements began in the arms, and within twenty-four hours these became general and very violent in character. He did not sleep for two days prior to admission to hospital, nor could he be fed. His condition was attributed to the acute rheumatism from which he had recently suffered.

Previous health.—He had scarlet fever two years previously. There was no history of any other illness. His father said that he was a bright and clever boy, though somewhat nervous.

Family history.—His mother is very nervous and excitable, and an aunt on his mother's side suffered from fits.

Condition on admission.—He is sparsely nourished, but otherwise a well-developed boy for 12 years. The choreic movements are very violent in the head, trunk, and limbs. He is tossed about in his cot, which is padded. It is impossible to attract his attention. He is in a state of maniacal delirium and cannot speak, and does not appear to appreciate the nature of his surroundings. His wrists are slightly swollen and tender. His tongue and mouth are dry. The mucous membrane of the

mouth is dry and covered with sordes. His bowels and bladder are incontinent. His temperature is 103°. On account of the violence of the movements it is difficult to examine him thoroughly. There is evidence of a pleural effusion on the left side. The pulse is regular in force and rhythm, and numbers 130 per minute.

Condition during residence.—He was given one-eighth of a grain of morphia, and this was repeated in four hours, and he had two hours sleep. He awoke from sleep in a restless and delirious state. He was given a rectal injection of 15 grains of chloral. Warm baths were given. During the first week of residence he never slept for more than two hours at a time, and such sleep as he obtained appeared to be the result of drugs and baths. It was possible, however, to feed him to some extent, although during the first week he lost flesh rapidly and his temperature remained high. At the beginning of the second week he was given 7½ grains of aspirin four-hourly, and the temperature began to settle and the restlessness to disappear; and after a week's treatment with the aspirin, during which the baths were still continued, the movements had become distinctly diminished and the delirium much less violent. He still appeared, however, to be unconscious of his surroundings, and he showed signs of the presence of hallucinatory ideas. During the third week the same treatment was continued, and he went on improving. The temperature had almost settled, he had gained control of his bowels and bladder, was feeding well, and gradually was becoming mentally more clear. He was, however, very depressed, and although there were slight involuntary movements in the arms and legs and face, voluntary movements were in a very depressed state. He took little interest in his surroundings. He slept very well. The fluid in the chest had by this time disappeared to some extent. In the fourth week of residence he was put on light diet and on arsenic. The aspirin was continued. He was now making good progress and putting on flesh, and the movements in the arms were now very slight. His heart at this time was found to be slightly enlarged, and there was a long, soft, blowing, systolic murmur at the mitral area. His pulse was regular, and numbered 100. He was very emotional, but bright and intelligent. The condition of depression from which he suffered after the maniacal

delirium was now disappearing. Eight weeks after admission he was sent to the convalescent home, but returned a week later with movements of the arms and legs and face. He was also in a very excited state. He was put to bed, and once more treated with aspirin and baths, and on this occasion there was no return of the rheumatism or of serous inflammation. In a month he was sent home quite well so far as the chorea was concerned.

Condition after six months.—He is very much improved in strength. He has put on flesh, and has grown and developed during the last six months. He is back at school. He is obviously a nervous and excitable boy. His eyes are keen, and he has much more than the average intelligence for his years. The cardiac condition has not altered, so far as physical examination can determine, during the last six months. His father says that during that period he has been very well. He has not been exposed to cold, and physical exertion has been reduced to a minimum. He is easily excited, but there has been no return of the movements.

Chorea (Case XVIII, V.I., G.).—Robert M., aged 13 years, was admitted to hospital suffering from involuntary movements of the arms and legs of six months' duration. The movements began without any obvious cause.

Previous health.—He had measles at 6 years of age, and scarlet fever at 8 years. He has never had rheumatism. When an infant he suffered from convulsions. He has been backward at school. He reads and writes poorly, and he has very little idea of arithmetic.

Family history.—His mother suffers from rheumatism and asthma, and he has an uncle who takes epileptic fits.

Condition on admission.—He is a strong, well-built boy. He has a heavy facial expression and looks dull, and on examination shows a considerable degree of mental deficiency. He has a narrow, highly-arched palate, and his articulation is clumsy. The choreic movements of the limbs are not very severe. The deep and superficial reflexes are exaggerated; sensation appears to be normal. The area of cardiac dulness is within normal limits, and the heart sounds are pure and free from murmur. The pulse is regular and its rate is 80 per

minute. His tongue is clean, urine is normal, and the temperature is 98°.

Condition during residence.—During residence he was given arsenic and aspirin as well as bath treatment. After three weeks in bed the movements had become decidedly less, and he was allowed up. He did not continue to make progress, and he was put back to bed at the end of a week, and kept in bed for another three weeks. There did not, however, seem to be any marked change in his condition, and he was again allowed up and allowed to go home after nine weeks' residence. There was still a considerable amount of involuntary movement of both arms and legs when he was dismissed.

Condition after six months.—This patient's condition has not changed much during the last six months. He is dull and stupid and unable to go to school. There has been no rheumatism, and his heart shows no evidence of disease.

The preceding four cases are representative of the average type of chorea seen in the wards of a general hospital. Rheumatism, cardiac disease, and neuropathic inheritance are associated conditions in the personal and family history in varying proportions. A full discussion of the significance of these associated conditions in the interpretation of chorea will be reserved for the place where the problem of pathogenesis will be considered. These four cases may be said to represent those to which some authors have applied the term "infectious" chorea. We shall proceed now to detail some cases in which the choreic conditions show a more intimate association with the neuroses.

B. CHOREA ASSOCIATED WITH PREGNANCY.

Chorea (Case XXII, V.I., G.).—Annie B., aged 22 years, was admitted to hospital suffering from involuntary movements of the arms, legs, head, and trunk. Her illness commenced three months ago, with weakness in the left arm and a peculiar shaking feeling in the left leg. About a week afterwards the movements spread to the whole body, and during the past fortnight they have been very severe.

Previous health.—She had scarlet fever and measles in childhood. At the age of 16 she had slight pains in the joints, and a year ago she had an attack of acute rheumatism.

Family history.—It was impossible to learn anything about the family history.

Condition on admission.—She was very restless, tossed about in bed, and grimaced to such an extent that her speech was almost unintelligible. She was so very restless that it was impossible to examine her properly. Her temperature was 99°. She was four months pregnant.

Condition during residence.—On admission she was so restless that morphia had to be administered, and she was put on ammonium bromide and liquid extract of ergot four-hourly, and 10 grains of aspirin, also four-hourly. After a fortnight's treatment the movements had become distinctly less violent, and it was possible to examine her more thoroughly. Her heart appeared to be normal. The tongue was dirty. The palate was highly arched, and the teeth were in a very bad condition. Otherwise, her digestive system showed no signs of disease. Her pupils were dilated, and reacted normally. The deep and superficial reflexes were exaggerated, and there were areas of anæsthesia over the extensor surfaces of the arms and legs. The urine was normal. Mentally, she was dull and stupid. Her intelligence was much below the average. She took little interest in her surroundings, and would be classified—from the educational standpoint—mentally defective. After six weeks' residence in hospital the movements had become distinctly less, and were now confined to the face and arms. She was still, however, far from well. Her mental condition did not improve, and she went home still suffering from slight involuntary movements of the arms, and grimacing, after eight weeks' residence. Her heart was normal.

Condition a year later.—The movements were still present in the face and arms, and she said that she had never at any time been completely free from them. She had not suffered from rheumatism in the meantime, and her heart is normal.

To elucidate the question arising out of the relation of pregnancy to chorea, it is important to consider in this connection the history of other cases of pregnancy complicated

by nervous disorder which came under observation about the same time.

Case of pregnancy complicated by hysteria (motor agitation).—A. B., aged 24 years, was admitted to hospital suffering from general convulsions of a week's duration. She was nervous and highly strung, and had been the victim of considerable worry. She was three months pregnant at the time of the onset of the convulsions. The convulsions were general, and lasted about half an hour. She had as many as six within twenty-four hours. When the convulsions passed off there remained behind during the whole intervening period a disposition to clonic spasm of the right side of the body, without loss of consciousness. After admission to hospital and dietetic and sedative treatment, the general and left-sided convulsions disappeared, but there remained behind, when excited, slight clonic spasms of the right arm. Proper care and nourishment brought about a disappearance of all the symptoms in six weeks.

Case of pregnancy complicated by hysteria (sensory disturbance).—Kate L., aged 25 years, was admitted to hospital suffering from severe vomiting and weakness of a month's duration. She was two months pregnant. The vomiting was very severe, but was not accompanied by headache or nausea, although there was a feeling of giddiness. She felt also as if at times the bed were swinging round the ward or were being elevated to the roof. There was no evidence of organic disease in the digestive, circulatory, respiratory, or urinary systems. Her pupils were moderately dilated, and reacted normally. Her field of vision is very much contracted when examined by the perimeter, although she can see quite well. There is a considerable degree of anæsthesia in the skin all over the body. The knee reflexes are very exaggerated. She is now six months pregnant, and her condition has not changed since her admission to hospital.

C. CHOREA ASSOCIATED WITH EPILEPSY.

Chorea (Case XXVI, V.I., G.).—K. B., aged 25 years, was admitted to hospital suffering from chorea of three weeks' duration. She is three months pregnant. Her present attack commenced with a fainting fit, which, from its description, would appear to be epileptic. She has on various occasions had similar fits. There is no history of rheumatism.

Previous health.—She has had previous attacks of chorea at

8 years, 11 years, 20 years, and 22 years, and the last two attacks supervened during pregnancy.

Family history.—There is nothing of importance in the family history.

Condition on admission.—The movements in the arms and legs are of the nature of irregular jerkings, and are more rapid than is usually the case with the involuntary movements of chorea. Her speech is indistinct, and tendon reflexes are exaggerated. She drags her left foot. The heart would appear to be normal in size. There are no murmurs. The pulse is irregular, but the irregularity would seem to depend on the irregularity of the respiration incident to the chorea. The rate of the pulse is 80 per minute.

Condition during residence.—She remained in hospital for two months, and was treated with aspirin, bromide, and arsenic. When she left, the movements had diminished very considerably, but had not by any means disappeared. During her residence she showed no signs of epilepsy.

Condition a year later.—During pregnancy the involuntary movements continued; sometimes they were more violent than at others. After delivery they gradually disappeared. She is now well. Her heart is normal.

Chorea (Case XXX, E.D.H.).—M. M., aged 62 years, was admitted to hospital suffering from severe chorea, involving the arms, legs, face, and trunk. The condition had lasted for a fortnight, and was associated with an acute inflammatory condition of the mouth.

Previous health.—She has always been of a nervous and excitable disposition, subject to fits of temper and easily irritated. A year ago she suffered from an acute inflammatory condition of the mouth, similar to that which is now present. It was supposed to be due to decayed teeth. Several teeth were removed, and a fortnight after their removal chorea supervened. For this she was treated in hospital, and after three months residence she was dismissed comparatively well. The choreic movements subsided, but in the intervening period between the disappearance of the movements of that attack and the onset of the present attack she has suffered from recurrent attacks of loss of consciousness, which, according to the story,

present all the features of "petit mal." These attacks latterly came on every alternate day. Since the onset of her chorea on the present occasion the attacks of "petit mal" have ceased. She has never had rheumatism.

Family history.—Of three daughters, two have had chorea, one of them on two occasions, and the other on three occasions. This latter is also the subject of a mitral stenosis, although neither she nor any other member of the family has had articular rheumatism.

Condition on admission.—The choreic movements were very exaggerated, but slow and of an athetoid type. The grimacing constitutes, probably, the most marked feature in the whole picture. She is emotional, and it is difficult to concentrate her attention. The tendon reflexes are exaggerated. There is no anæsthesia of the skin. The mucous membrane of the tongue, cheeks, and gums is swollen, and in places œdematous. There are small ulcers on the gums. The mouth is evidently in a very painful condition. Her heart is normal. There is no other evidence of disease.

Condition during residence.—The treatment during the first week of residence consisted in the administration of chloral and paraldehyde, and although sleep was induced, especially by the paraldehyde, the movements during the waking periods were not much diminished. In the second week of residence these sedatives were discontinued, and she was given 10 grains of aspirin four-hourly, and from the time when the aspirin was commenced her condition began to improve, till now, at the end of six weeks' residence, she is almost well. In the disappearance of the symptoms the grimacing has remained in a more pronounced fashion than any of the other choreic movements. The mouth condition has from the beginning been treated with chlorate of potash and tincture of myrrh. The attacks of "petit mal" which were present during the interval between her previous attacks of chorea have completely disappeared since the beginning of the present choreic attack.

Chorea (Case XXXVIII, V.I., G.).—Agnes M., aged 18 years, was admitted to hospital suffering from chorea of nine months' duration, and from convulsions of two years' duration. The chorea began in the arms, and subsequently appeared in the

legs and head. It varies in intensity from time to time. During the past nine months it has not disappeared. For the past two years she has suffered from convulsions which, from the description, would appear to be epileptic in character. These come on, on an average, about once in six weeks, and last for ten minutes. She is quite unconscious, but usually has not hurt herself. She has suffered from rheumatism at various times for the past six years, but it has never assumed an acute, febrile character.

Family history.—Her father is a heavy drinker, and is very irritable and short-tempered. Two brothers had convulsions as children, and a sister is feeble-minded.

Condition on admission.—There are choreic movements of the limbs, face, and trunk. They are not severe. Her heart is slightly enlarged towards the left, and there is a long, blowing systolic murmur which is conducted into the axilla. Her pulse is irregular in force and rhythm, the irregularity being due to extra-systoles, and it numbers 110 beats per minute. The temperature is 100°. The deep and superficial reflexes are exaggerated. The pupils are equal and respond normally. She has a dull, heavy expression, her intelligence is below the average, and it is difficult to concentrate her attention.

Condition during residence.—She remained in hospital for three weeks, but did not improve in any marked degree, and was dismissed in much the same condition as on admission. There were no convulsions during her hospital residence.

D. CHOREA ASSOCIATED WITH ORGANIC BRAIN DISEASE.

Chorea (Case XLIV, V.I., G.).—Victoria O., aged 17 years, was admitted to hospital suffering from chorea involving all the limbs, the face, and the trunk, the right side being more affected than the left.

History of illness.—Ten days before admission involuntary movements commenced in the right arm and then spread to the right leg, and a week later they involved the whole body, so that walking became impossible.

Previous health.—When she was 2 years of age she developed a paresis on the right side of the body, from which there has been a considerable recovery, although the right arm and leg

are spastic. She is hydrocephalic and feeble-minded. She was at school till the age of 15, but did not make much progress.

Condition on admission.—The choreic movements affect the whole body. There is a paresis of the right side of the body, with some rigidity of the right limbs, and exaggerated reflexes. She is emotional and lacks the capacity of giving attention. She is difficult to manage. There is no evidence of heart disease, and she has never had rheumatism.

Family history.—There is nothing of importance in the family history.

Condition during residence.—She was treated with aspirin and with salvarsan, and after ten weeks' treatment there was practically no change in her condition. It had, however, varied from time to time during residence. Examination of the blood gave a negative Wassermann reaction.

Condition a year later.—A year afterwards the choreic movements had disappeared, with the exception of very slight involuntary movements in the right hand. Her mental condition had also improved very considerably in the interval.

Case of epilepsy superimposed on hemiplegia.—Janet C., aged 18 years, suffered from epilepsy since the age of 8.

History of illness.—To all appearances she was a healthy child till 3 years of age, when she developed a paralysis on the left side of the body. From this there was a partial recovery, so that she was able to walk about and use her left arm and leg. At the age of 8 years she began to develop fits. She was, however, able to attend school, and the fits came on only at infrequent intervals. Latterly, however, she has had as many as twenty-five in a day.

Family history.—There is no definite history of neuropathic inheritance. Her father was alcoholic and syphilitic.

This case is cited for comparison with the foregoing case, in which case there was a hemi-paresis giving rise to feeble-mindedness. In the one case, superimposed on this was a typical chorea, and in the other case, superimposed on the hemi-paresis was a typical epilepsy. The epileptic condition yielded in a remarkable way to salvarsan treatment.

E. CHOREA ASSOCIATED WITH NEUROSIS.

The following cases are examples of chorea occurring in patients who are the subjects of a neurosis:—

Chorea (Case XLVIII, V.I., G.).—Mary M., aged 28 years, was admitted to hospital suffering from symptoms suggestive of oesophageal spasm.

History of illness.—She has suffered for years from gastric symptoms, and recently difficulty in swallowing has been superadded. On several occasions she has had attacks of chorea. These attacks have disappeared usually after a week or a fortnight.

Condition during residence.—Shortly after admission to hospital she developed one of her choreic attacks, and this passed off, leaving a convulsive tic affecting the muscles on the left side of the neck. These symptoms suggested the possibility of a neurosis, and on examination she was found to present indications pointing definitely to hysteria. Certain areas of the skin were completely insensitive to pain, and there was a definite contraction of her field of vision. The tendon reflexes were markedly exaggerated. Her mental condition was also indicative of hysteria. There was no history of rheumatism, and her heart was normal.

Chorea (Case LII, V.I., G.).—Janet D., aged 33 years, was admitted to hospital suffering from gastric symptoms of eight years duration.

History of illness.—She began to be troubled with dyspepsia eight years ago, and was treated for gastric ulcer six years ago. During all this time she has practically never been free from symptoms.

Previous health.—She had convulsions when a child, and had chorea at 18 years of age, and again shortly before the time when she was treated for gastric ulcer. She has been operated on for appendicitis, has had her ovaries removed, and has been curetted three times. She has never had rheumatism.

Family history.—She is one of a family of six. They are all very nervous and excitable, and one sister is definitely defective.

Condition on admission.—She is very nervous and excitable. The excitement of examination and questioning produces slight convulsive movements, which are of the nature of ticks, in the right arm. Her manner and conversation are simple and childish. Her intelligence is defective. There are areas of anæsthesia on the extensor surfaces of the limbs. The deep and superficial reflexes are exaggerated. The heart is normal. There is no other evidence of somatic disease.

F. CHOREA ASSOCIATED WITH MENTAL DEFICIENCY
OR DEMENTIA.

Chorea (Case LVI, E.D.H.).—John M., aged 50, was admitted to hospital suffering from violent choreic movements involving the whole body. It was impossible to get a definite history of his illness beyond the fact that he had suffered from the chorea for about eight years, and that it supervened after a severe burning accident in which his legs were badly scorched. The violence of the movements would appear to vary from time to time, but he is now quite demented, and unable to look after himself. So far as can be ascertained there is no history of rheumatism, and there is no evidence of cardiac disease. He was under observation for about six months, and his condition did not change in a degree sufficient to warrant his dismissal. He was sent to the asylum.

Chorea (Case LVII, E.D.H.).—Rose M., daughter of the preceding, aged 24, was admitted to hospital suffering from chorea of a year's duration. Although the father and daughter were in hospital at the same time they had not seen each other for fifteen years, so that the development of the chorea in the daughter cannot have been associated with stimulus of imitation. In the woman's case the movements corresponded exactly with those observed in her father. She had never suffered from rheumatism, and her heart was normal. Her conduct, however, was simple and childish. She was obviously defective in intelligence, and unable to look after herself. She was sent to an institution under the Mental Deficiency Act.

(*To be continued.*)

Obituary.

ALEXANDER MAXWELL ADAMS, F.R.C.S.E.,
LANARK.

WE regret to announce the death of Mr. Alexander Maxwell Adams, which occurred at Fairfield, Lanark, on 9th April. Mr. Adams, who became a licentiate of the Faculty of Physicians and Surgeons, Glasgow, in 1857, and of the Royal College of Physicians, Edinburgh, in 1860, was admitted to the Fellowship of the Royal College of Surgeons, Edinburgh, in 1875. His first post was that of house surgeon to Gray's Hospital, Elgin, and later he was appointed medical superintendent of Elgin County Lunatic Asylum. Settling afterwards in Lanark, he speedily acquired an extensive practice in the town and district, and his outstanding position was reflected in the numerous medical appointments which he held at various times. He was surgeon to the Lockhart Hospital, medical officer of health for Lanark, and among his other posts were those of medical officer to the Lady Hozier Convalescent Home, and medical officer to the Lanark Poorhouse. He took a keen interest in Volunteering, and was at one time surgeon-colonel to the 3rd and 4th Battalions Scottish Rifles. Among his contributions to medical literature was a paper on the action of chloral hydrate which appeared in the *Glasgow Medical Journal*. Mr. Adams, who died at the advanced age of 78 years, will be widely mourned as an able and resourceful practitioner, and as a man whose high character brought him honour, affection, and respect.

GEORGE M'KERROW, M.B., C.M. GLASG.,
AYR.

WE regret to announce the death of Dr. George M'Kerrow, one of the most prominent and best known citizens of Ayr. Dr.

M'Kerrow was a graduate of the University of Glasgow, where he took the degrees of M.B., C.M., in 1871. After graduation he served as house physician and house surgeon in the Royal Infirmary, Glasgow, and about thirty-five years ago he settled in Ayr, where from the time that he took up residence his professional gifts were recognised. A man of strong character and of shrewd intuition, and a physician of outstanding capacity, who at once commanded the confidence of his patients and won their esteem, he speedily established his position; and his success among all classes of the community, in the town, in the county, and even beyond its bounds, was probably unsurpassed within a very wide sphere. His clients made a friend of him, and gave him their fullest confidence; and as his experience ripened with advancing years his reputation grew, and the call upon his diagnostic acumen and his skill in treatment was made not only by the increasing number of his personal patients, but by his colleagues in the surrounding country, whose appreciation of his ability brought him an extensive consulting practice. Busy as he was with his private work, and with his services to the community in his capacity as surgeon to Ayr County Hospital, he was never in a hurry, nor did he fail to concentrate upon each of his patients the best of his talents, until about a year ago he was forced to retire from the practice of his profession by the onset of the illness from which he died on 23rd March. From its beginning he recognised that his days were numbered, accepted his fate with courageous resignation, and closed his career amid the regrets of the entire community.

Dr. M'Kerrow was more than a physician; he might have won his way to the front in almost any capacity by the qualities of the gifts and by the power of concentration that he displayed in the walk of life which he travelled. He had no mind for the strifes of party or of sect. Though he held very clear and decided views of his own on political questions, these were never the hard and fast opinions promoted by any party, and he elected to confine himself to his own particular sphere, in which he found ample and sufficient claims upon his energies. In matters ecclesiastical he was careless of anything that savoured specifically of sect, holding as he did that divergences of opinion on points of dogma count for but little in comparison with the

qualities that make the real worth of a man. His tastes were simple, as his life was simple, but through it all he carried the impress of a fine character, which it was impossible to know him and not to feel. He was abundantly tolerant of the views of others; he expressed his own with perfect freedom; and both in his profession and outside of it he had the qualities of an independent thinker, unconventional wherever convention would have fettered his independence.

Dr. M'Kerrow, who was in his sixty-sixth year, is survived by his wife, two sons, and two daughters. The elder son, Dr. Charles M'Kerrow, has been in practice with his father for a few years. Both daughters are married, the elder to Dr. J. S. Geikie, who has been professionally associated with his father-in-law for the past twelve years.

WILLIAM SANDILANDS HARRISON, M.B., C.M. GLASG.
R.A.M.C.

WE regret to announce the death of Lieutenant-Colonel W. S. Harrison, which occurred on 12th April at Haslingden, Lancashire. Born on 15th March, 1872, Lieutenant-Colonel Harrison was educated at Glasgow, and studied medicine at Glasgow University, taking the degrees of M.B., C.M., in 1893, at the age of 21. He entered the R.A.M.C. as surgeon-lieutenant in January, 1895, became surgeon-captain three years later, was promoted major in 1906, brevet lieutenant-colonel in July, 1914, and lieutenant-colonel, as was announced in our April issue, on 1st March, 1915. He served in the Tirah campaign, on the North-West Frontier of India, in 1897-98, and was awarded the medal with two clasps. At a later date he was appointed assistant professor of pathology at the Royal Army Medical College, Millbank, a post which he filled with much distinction, and from which he proceeded to that of senior medical officer in Jamaica.

The following sentences from an appreciation by Colonel Sir W. B. Leishman, F.R.S., which appeared in the *British Medical Journal* of 24th April, form an eloquent tribute to the memory of one whose attractive personality will long be remembered,

and the results of whose labours will long survive their too early close:—

“By the death of Lieutenant-Colonel W. S. Harrison the Royal Army Medical Corps has lost an officer whom it could ill spare, and for whom, had he lived, high honours and distinctions would most certainly have been in store. There can have been no officer in the corps of his standing who was more universally respected and liked both for his exceptional professional qualifications and his sterling character. A sense of personal bereavement must be strong in all who knew him and read of his death. The writer had the privilege of the closest association with him as a fellow worker in the Royal Army Medical College for many years, and was under a heavy obligation to him for loyal and untiring co-operation, both in research and in teaching; the passing years served but to strengthen a feeling of admiration and respect for a character and intellect of exceptional strength. The research work accomplished by Lieutenant-Colonel Harrison in many lines is of great and permanent value, notably his important share in establishing typhoid inoculation upon a firm and scientific basis; the benefits resulting from this work are being reaped to-day by the army in France. His appointment to the Chair of Tropical Medicine at the Royal Army Medical College proved an immense success, and furnished an instance of that rare but admirable combination—a clinical observer of exceptional experience and insight armed with a full practical knowledge of modern laboratory methods. . . . It was a hard stroke of fate which denied to him the chance of serving his country at this time, and one which he felt bitterly, but the fortitude and calm courage with which he endured his painful illness and faced the inevitable will not readily be forgotten by those whom he honoured with his friendship.”

CURRENT TOPICS.

UNIVERSITY OF GLASGOW: GRADUATION IN MEDICINE.—At the graduation ceremony held on 1st April the degrees of M.B., Ch.B., were conferred upon forty-six students. The date was chosen to suit the convenience of students who are on military service or are about to take up commissions with the Forces. Some of the graduands had already been on foreign service, and one of them—Mr. R. T. Grant, lately elected President of the Students' Union—had been wounded in Flanders and invalided home, with the fortunate result of a complete recovery.

The capping ceremony was performed by Principal Sir Donald MacAlister, who briefly addressed the graduates at its conclusion. Their country, he said, needed them greatly at this time, and he was convinced that they would not fail her in her need. They had been admitted into a goodly fellowship. He knew they would make it their aim to be worthy of it. They had been faithful to the first duty enjoined by the military authorities—to complete their course in order to be able to afford the essential services that only the trained could render. The graduates had therefore given to their friends an earnest that they would also be faithful to the higher duties to which they would be called. To encourage and stimulate them in their efforts they had the noble examples of many others. He had already received the names of 384 graduates in medicine who were on service with the Forces of the Crown, and the list was by no means complete. He was happy to know that it would be substantially increased by additions from their number that day. Whether or not in that service they won brilliant honours like Ranken and Leishman, who were singled out for special mention, or like Greenlees and Robertson and Sloan, it was within the power of all of them to prove that they were worthy to be comrades and fellow-workers

of men like these. It would lie with themselves to make the University proud of their character and bearing in the time of trial. In the name of the Faculty of Medicine and the Senate he congratulated them on the opportunities of service for their country which was now open to them.

The following is a list of the medical graduates, with the degrees conferred :—

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY
(M.B., CH.B.)

I. WITH COMMENDATION.

Ronald Thomson Grant.
Seymour Cochrane Shanks.

II. ORDINARY DEGREE.

Ismail Abdurahman.
George Kirkwood Allan.
James Mair Anderson.
William Ernest Boyd, M.A.
Samuel Bryson.
John Buchanan.
John Munro Campbell.
Alfred Mackenzie Clark.
George Gibson Cooper.
Henry Paterson Crow.
Alexander Hogg Donaldson.
Harry Taylor Findlay.
George Fleming.
George John Fraser.
Ian Maclean Frazer.
David Gould Gardiner.
William Gordon.
Thomas Cameron Houston.
William Hunter Howat.
Robert Kyle.
Hugh Brown Lawrie.
Alfred Thomas Logan.

Donald Kerr MacDougall.
Donald M'Donald M'Intyre.
James Murdoch Mackay.
Joseph Allan MacLean.
Thomas Duff Miller.
Janey Lamond Munro.
Prem Nath, L.D.S.
Thomas Augustine O'Brien.
John Roberts Pate.
James Paterson.
William Burns Prinrose.
Alexander Forbes Ross.
William Jack Scade.
William Ballantine Stewart.
Robert Sutherland Strachan.
Robert Taylor.
Cecil Raymond Tytler Thompson.
Margaret Walker.
William James Cunningham Watt.
James Gordon Wilson.
Thomas Young.

The following gentlemen passed with distinction in the subjects indicated :—In Medicine, William E. Boyd ; in Surgery, Alfred T. Logan ; in Midwifery, Hugh B. Lawrie.

At the usual spring graduation ceremony, held in the Bute Hall on 20th April, only eight medical graduands were presented by the Dean of Faculty, Professor Bryce. The following is a list of the degrees conferred, and of the University prizes gained by medical graduates :—

DOCTORS OF MEDICINE (M.D.)

J. B. Alexander, M.B., Ch.B.

James Smyth, M.B., C.M.

Frederick Stokes, M.B., Ch.B.

BACHELORS OF MEDICINE AND BACHELORS OF SURGERY
(M.B., Ch.B.)

I. WITH COMMENDATION.

D. F. Macdonald, B.Sc.

II. ORDINARY DEGREE.

John Anderson.

W. E. A. Buchanan.

W. Combe, B.Sc.

Robert Forbes.

P. O. Moffat.

John Smith, M.A., B.Sc.

N. M. Smith.

University Prizes.—Bellahouston Gold Medal for eminent merit in thesis for M.D.—G. H. Clark, M.D.; J. W. M'Nee, M.D.; J. B. Orr, M.A., B.Sc., M.D. Straits Settlements Gold Medal in Tropical Medicine—W. D. H. Stevenson, M.A., M.D.

TRIPLE QUALIFICATION PASSES.—The Quarterly examinations of the Royal College of Physicians of Edinburgh, Royal College of Surgeons of Edinburgh, and Royal Faculty of Physicians and Surgeons of Glasgow, held in Edinburgh, were concluded on 9th April.

The following candidates, having passed the final examination, were admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:—Arthur Craig, Perth; William Leckie Coullie, East Lothian; Victor James Wilson, Liverpool; Bak Hin Ong, Malacca, Straits Settlements; and Alamu Ojo Olaribigbe, Sierra Leone, W.A.

The following candidates passed in the subjects indicated:—In Surgery—Charles Evelyn Meryon, John Murray Hiddleston, and Joseph Sydney Dickson; in Midwifery—Nathaniel Benjamin Morris, Charles Evelyn Meryon, and John Murray Hiddleston; in Medical Jurisprudence—Matthew M'Lintock Bainbridge, John Park Mathie, William Ainsley, Alexander Gray M'Kee, Douglas Charles Murray Page, Alexander William M'Gregor, William Alfred Backenstoe, Paul Lucien Manuel, Robert Christian Wilson Spence, William James Forsyth Craig, and Edward Spence.

The examinations held in Glasgow were concluded on 23rd April.

The following candidates, having passed the final examination, were admitted L.R.C.P.E., L.R.C.S.E., L.R.F.P. and S.G.:—Frederick Arthur Vere Denning (with honours), Davidson's Mains; John Walker, Uddingston; George Thomson, Glasgow; John Mellon Smeaton, Glasgow; Stewart Newnham Toulmin, Davidson's Mains; Wilson Thabo Mongoli Sebeta, Basutoland; Victor Albert Goonetilleke, Ceylon; John Scott, Dalry, Ayrshire; William Pigg Over, Sandhurst, Berks; Thomas Ross Scott, Edinburgh.

APPOINTMENTS.—The following appointments have recently been made:—

A. Louise M'Iroy, M.D. (M.B., 1898), D.Sc., to be Surgeon-in-Chief to the 3rd Unit, Scottish Women's Hospital, Troyes.

B. S. Nicolson, M.B., C.M.Glasg. (1893), to be Tuberculosis Officer for the County of Derby.

W. P. A. Stewart, M.B., Ch.B.Glasg. (1912), to be Certifying Factory Surgeon for the Tarbert District, County of Argyll.

Royal Navy (3rd April): Temporary Surgeon J. C. Walker, M.B., Ch.B.Glasg. (1914), to *Pembroke*, additional.

Royal Army Medical Corps (18th March): To be temporary Lieutenants—S. J. Henry, M.B., Ch.B.Glasg. (1908); W. S. Baird, M.B., C.M.Glasg. (1895); J. M'Culloch, M.B., Ch.B.Glasg. (1914); D. S. Brough, M.B., Ch.B.Glasg. (1911); R. A. Steven, M.B., Ch.B.Glasg. (1913); F. C. Macaulay, M.B., Ch.B.Glasg. (1908).

30th March: A. W. Anderson, M.B., Ch.B.Glasg. (1905), is granted temporary rank as Captain while serving with the Field Ambulance of the Welsh Division.

Scottish Command Orders (3rd April): The following civilian medical practitioners are employed in medical charge of troops as under:—At Coatbridge—J. L. White, M.B., C.M.Glasg. (1891), from 4th November; at Rutherglen—R. Clarke, M.D.Glasg. (M.B., 1887), from 14th October.

6th April: Civilian medical practitioners. The following appointments have been made:—Ayr—A. Young, M.B.Ed.; W. F. Brown, M.B., C.M.Glasg. (1886); J. S. Geikie, M.D.Ed. Kilmarnock—R. C. Robertson, M.B., C.M.Glasg. (1891). Stirling—J. Drew, M.D.Glasg. (M.B., 1869); J. H. Murray, M.D.Ed.

Glasgow—J. Baird, M.B., C.M.Glasg. (1889). Girvan—A. M. Macdonald, M.B., Ch.B.Glasg. (1909). Pollokshaws—C. Whish, M.B., C.M.Glasg. (1885). Renfrew—J. B. Stevens, M.D.Glasg. (M.B., 1892). Johnstone—J. C. Herbertson, M.D.Glasg. (M.B., 1883). Paisley—J. N. M'Arthur, M.B., C.M.Glasg. (1888).

Royal Army Medical Corps (9th April): To be temporary Lieutenants—W. W. Turner, M.B., Ch.B.Glasg. (1902); A. H. Davidson, M.B., Ch.B.Glasg. (1912); R. N. Thomson, M.B., Ch.B.Glasg. (1914).

10th April: The undermentioned Captains to be Majors—S. E. Lewis, M.B., Ch.B.Glasg. (1902); J. D. Richmond, M.B., Ch.B.Glasg. (1900).

12th April: J. M. W. Morison, M.B., C.M.Glasg. (1896), is granted temporary rank as Lieutenant while serving with the Liverpool Merchants' Mobile Hospital.

Army Medical Service (21st April): Colonel (now Surgeon-General) R. Porter, M.B., C.M.Glasg. (1879), to be temporary Surgeon-General.

Royal Army Medical Corps (21st April): To be temporary Lieutenant—D. L. Tate, M.B., Ch.B.Glasg. (1906).

To be Lieutenant-Colonel—Major J. G. M'Naught, M.A., M.D. Glasg. (M.B., 1890).

BEQUESTS TO GLASGOW HOSPITALS.—By the will of the late Mr. Alexander Elder, of Southport, who died on 25th January at the age of 81, a sum of £100,000 has been left upon trust to found, equip, and endow a hospital for the poor of Govan at or near the Elder Park, Govan, to be known as the "David Elder Infirmary," in memory of his father. A sum of £50,000 has been left to the Western Infirmary, Glasgow, for a new wing (or to name an existing wing), to be called the "Alexander Elder Wing." There are other specific bequests to hospitals and benevolent institutions in Southport and Liverpool; and the residue of his property is left to such charitable objects in the cities of Liverpool and Glasgow, existing at his decease, as his executors may think fit, or in the founding of new charities in those cities.

Mr. Elder was the last surviving member of the family of the late Mr. David Elder, engineer, Glasgow. He was a brother of the late Mr. John Elder, founder of the firm which is now the Fairfield Shipping and Engineering Company. With Mr. John Dempster he founded the firm of Elder, Dempster & Co. He was chairman of the British and African Steam Navigation Company, and was for many years a director of the Pacific Steam Navigation Company. In 1909 he contributed a sum of £20,000 for the establishment of the Chair of Naval Architecture at Liverpool University.

GLASGOW PANEL DOCTORS: QUESTION OF POLITICAL ORGANISATION.—A meeting of medical practitioners on the Glasgow and West of Scotland panels was held on 15th April in the Christian Institute, Glasgow, to consider the formation of a branch of the Panel Medico-Political Union. Dr. Thomas Colvin, who presided over between thirty and forty doctors, said that the Panel Medico-Political Union was in no way opposed to any existing medical organisation.

In the course of an address Dr. A. Salter, London, said that the establishment of the Union was an endeavour to find some method of easing the difficulties under which panel doctors were labouring. Under the Insurance Act they were employees, and were subordinate to insurance committees and insurance commissioners. The interests of employers and employees were not identical; there was almost always an element of conflict. The insurance committees and the insurance commissioners were trying to get more and more out of them, while they wanted better conditions of service and better remuneration. Whether they thought it *infra dig.* or not, they must take a leaf out of the book of manual workers and combine. They were out for other objects than the safeguards provided by the British Medical Association. The constitution of that organisation prevented it from being a political body, and any union which was to achieve the end of safeguarding their status must be political. The insurance commissioners were paid civil servants, who had been given actual legislative power to introduce modifications and alterations in the Insurance Act, and the political weapon was the only one panel doctors could use for protection, for, unless they

could influence the House of Commons, they were lost. The Panel Medico-Political Union had a growing membership in England, Scotland, Ireland, and Wales, and he suggested that a Glasgow branch should be formed.

Dr. Cowie, London, said that there were 8,000 doctors on the panel who were not members of the British Medical Association, and he questioned whether the majority of the members of that body were on the panel.

It was moved and seconded that "a Glasgow branch of the Panel Medico-Political Union be formed and is hereby formed." An amendment was moved and seconded that "a branch be not formed at this point," the proposer and seconder pointing out that they were not opposed to the aims of the union, but that they thought more time should be allowed for considering the whole matter before a definite decision was taken. After a prolonged discussion the motion was carried by 15 votes to 10, some of those present refraining from voting.

MEDICAL BENEVOLENT FUND.—The annual meeting of the Glasgow Branch of the Royal Medical Benevolent Fund Guild was held on 18th March at 6 University Gardens. Professor Noël Paton presided. In the report for last year it was explained that the object of the Guild is to relieve distress among the widows and families of medical men by the addition of gifts of personal service and sympathy to the money grants of the fund, and by practical advice and assistance to enable those to whom it is possible to achieve independence by their own exertions. Of medical men or their dependents who received help from the Royal Medical Benevolent Fund during 1914 there were 84 with Scottish degrees, of whom 25 were resident in Scotland and 59 elsewhere. £908 was granted to these in 1914, and they had previously received £2,695. Of annuitants resident in Scotland, five received £20 per annum, one £18, and one £15, a total of £133. These annuitants had already received £1,138. The subscribers to the Glasgow branch numbered 125, and the money collected amounted to £59, 17s. 6d.

The Chairman emphasised the great need for the work of the Guild. He said that nowadays, possibly to a certain extent on account of the Insurance Act, the medical profession was much

more secure than it was formerly. It was, however, always a precarious profession, because medical men in the course of their duties were subject to the dangers of infection and exposure, and frequently their families were left unprovided for. It might be thought that at present medical men were in clover, and that there should be no real want, but when one came to inquire into the matter one found that men who before the war had recognised their duty to their country by becoming associated with Territorial corps were now serving at 14s. per day, which, in view of the expensive establishments they had to maintain, practically spelt ruin. Others who had not recognised their duty to the country before the war, and who had joined the service since the war began, were receiving a much higher figure, and had thus an advantage over the others. At the present time, as in the past, there was a great necessity for the Guild, and he believed that when the war was over there would be ample scope for its efforts.

The report was adopted on the motion of Dr. William MacLennan, seconded by Dr. Leonard Findlay.

On the motion of Dr. Barclay Ness, seconded by Mrs. Walker, the committee were re-elected as follows:—Lady M'Call Anderson (convener), Lady MacAlister, Mrs. Maitland Ramsay, Mrs. John Cowan, Mrs. William MacLennan, Mrs. Leonard Findlay, Mrs. Sewell, Mrs. Livingstone Loudon (Hamilton), Mrs. Joshua Ferguson (Paisley), Mrs. Grant Andrew, Mrs. Bryce, Mrs. Ebenezer Duncan, Mrs. Mackintosh, Mrs. Crawford Renton, Mrs. Dun, and Mrs. M'Kerrow (Ayr); honorary secretary, Miss M'Call Anderson; honorary treasurer, Miss Beatson.

CITY OF GLASGOW FEVER AND SMALL-POX HOSPITALS, BELVIDERE.—The report of the physician and superintendent, Dr. Alexander Johnston, for the year ending 31st May, 1914, states that the patients admitted numbered 4,277, as compared with an average of 4,434·5 for the previous four years. The daily average number of cases under treatment was 523, and the general mortality was 9·2 per cent, compared with an average for the previous four years of 9·02 per cent. Of the various diseases, scarlet fever, measles, and diphtheria were the most prevalent, there being 1,790 cases of the first, with 65 deaths; 883 cases of the second, with 103 deaths; and 632 cases of the

last of these, with 50 deaths. There were 302 cases of whooping-cough, with 64 deaths; 128 cases of puerperal sepsis, with 32 deaths; and 109 of enteric fever, with 15 deaths. Of 265 non-infectious cases admitted under mistaken diagnoses, 45 died. Of the 397 deaths from all causes, 263 occurred in children under 5 years of age. 18·3 per cent of the fatal cases were admitted in a moribund condition. The mortality-rate among the scarlet fever cases was 3·6 per cent, demonstrating the severe type of the disease experienced during the autumn of 1913; that of diphtheria was 7·9, the lowest on record in Belvidere Hospital; and that of enteric was 13·7. There were 31 cases of typhus, with a mortality-rate of 12·9 per cent. Among the staff, 13 nurses and 4 maids were affected with scarlet fever, 5 nurses and 3 maids with diphtheria, 3 nurses with enteric fever, and 1 nurse with measles. No case of small-pox was admitted during the year.

RENFREW DISTRICT ASYLUM.—The fifth annual report of the Dykebar Asylum deals with the period from 16th May, 1913, to 15th May, 1914. During this period, as is stated in the report of Dr. R. D. Hotchkis, medical superintendent, 103 patients were admitted, 60 were discharged, and 34 died, leaving 324 patients on the register—an increase of 9 during the year, as compared with an increase of 24 in each of the two previous years. The rate of admission was also lessened, 103 as against 125 in the previous year. Although in previous years alcohol appears as the most common cause of insanity, in 1913-14 more cases were attributed to previous attacks than to alcohol—21 as against 16. The most common form of mental disorder was melancholia, of which the cases amounted to 42 per cent of the total admissions. Of the 60 patients discharged, 42 had recovered, giving a recovery-rate of 40·7 per cent. Of these recoveries, 35 took place within the first six months of residence, a striking illustration of the familiar fact that the chance of recovery is greater the earlier a patient is brought for treatment. There were 34 deaths, a percentage of 10·5 on the average numbers on the register, being a decrease of 3 per cent as compared with the previous year. The reports by H.M. Commissioners in Lunacy, Dr. Hamilton Marr and Dr. John

Carswell, testify to the excellence of the work of the medical and nursing staff.

VICTORIA INFIRMARY, HELENSBURGH.—The thirty-fifth annual meeting of the subscribers to this institution was held on 1st March in the Victoria Halls, Helensburgh, when the report of the directors for the year 1914 was submitted. The number of cases treated during the year was 131, 9 being in residence at the beginning of the year and 122 being admitted during its continuance. Of these, 82 cases were surgical and 40 medical. Of the total number, 98 were discharged well, 11 improved, 10 died, and 2 were sent to the Western Infirmary, Glasgow, the balance of 10 remaining in hospital at the end of the year. Fifty out-door patients were attended to in the course of the twelve months. There was a loss on the year's working of £37, 16s. 5d., rather less than that shown for 1913, but bringing up the balance which had had to be met out of capital during the past few years to £256, 8s. 8d. The directors' report concludes with an expression of regret that by the National Insurance Act of 1913 the provisions of the National Insurance Act of 1911 were amended in so far as to abolish the power formerly given to approved societies to make agreements with institutions supported by voluntary contributions whereby, in the cases of insured patients without dependants, payment could be made to the institutions of one-half of the sick benefit as a contribution towards the cost of maintenance and treatment. Under the amending Act the approved society may now expend part of the sick benefit on surgical appliances for the benefit of the patient, but, if this be not done, must pay the whole benefit in cash to the patient after leaving the institution. Under this system institutions supported by voluntary contributions must now depend upon the gratitude of insured persons for any contributions towards their maintenance and treatment while patients.

GALLANTRY IN THE FIELD.—A War Office announcement, dated 7th April, mentions, among other officers recommended for gallant and distinguished service in the field, the following members of the Royal Army Medical Corps:—Major S. L. Cummins, M.D., Captain C. G. Browne, and Lieutenant

(temporary) G. W. Milne, M.D. Of these, the last named, Lieutenant G. W. Milne, is a graduate of Glasgow University, who, previous to the outbreak of war, was in practice in Kilburn. He took the degrees of M.B., C.M., in 1901, and that of M.D. in 1911. He is a diplomate of the London School of Tropical Medicine, and, before settling in London, had held the post of District Medical Officer in Nigeria, and had seen service abroad as surgeon to the Wri-Omonohaa Expedition and as civil surgeon with the South African Field Force.

In a supplement to the *London Gazette*, published on 15th April, there appears a list of officers of whose appointment as Companions of the Distinguished Service Order, in recognition of their gallantry and devotion to duty, His Majesty the King has been graciously pleased to approve. Among them is the name of Lieutenant (temporary) J. R. C. Greenlees, M.B., 22nd Field Ambulance, R.A.M.C., the distinction being conferred upon him "for his great gallantry and devotion to duty at Neuve Chapelle from March 10 to 14 in attending on the wounded under very heavy fire. Lieutenant Greenlees has been twice previously brought to notice for similar acts of gallantry." To those services, which earned for him a special mention at the recent graduation ceremony, and to his connection with the Glasgow school of medicine, reference has been made in a previous issue.

NEW RED CROSS HOSPITAL.—The executive of the Scottish Branch of the British Red Cross Society has made arrangements with the governors of the College of Domestic Science for the conversion of the College now in course of completion at the corner of Park Avenue and Park Drive, Glasgow, into a relief hospital. The arrangement has been arrived at under the auspices of the War Office and the Board of Education for Scotland. The occupation of the new building as a hospital will not interfere with the carrying on of the work of the College, as the temporary premises which have been used during its erection are still available. The Red Cross executive has made arrangements for relieving the governors of all expenses involved in the carrying out of the necessary equipment of the building for hospital purposes and its subsequent restoration, and of the other outlays involved in the continued use of temporary premises by the College.

The building is admirably adapted for use as a hospital, being well ventilated and planned, and immediately adjoining Kelvingrove Park. The medical experts who have examined it judge it capable of accommodating 300 patients. The Red Cross executive is satisfied that this additional relief hospital will be ready in time to meet the increased demand for accommodation in the West of Scotland to which the military authorities look forward in the immediate future.

RED CROSS SOCIETY: SCOTTISH BRANCH.—A review of the work of the Scottish Branch of the Red Cross Society since it was last referred to in our January issue reveals an extensive range of activities. Speaking on the 17th January at an Art Union drawing organised by the Scottish Photo Pictorial Circle, when the proceeds of the Union, £108, 13s., were given to the funds of the Red Cross, Sir George Beatson said that the Scottish Branch had at that date provided means for transporting the wounded practically from the battlefield until they reached Stobhill or the new military hospital at Springburn. There had been established, in a great measure by the efforts of the Scottish Branch, a very good service of motor ambulances to take the wounded from the clearing hospital, close behind the firing line, to the rail head, where they were put on ambulance trains, which were as comfortable as they could very well be. The Scottish Branch had sent out nineteen of these ambulances, three lorries, and a lorry kitchen. They were delivering now a column of motor ambulances numbering fifty, and they were sending out another ten to take the place of those sent forward. They had also given £1,000 to convert motor cars into ambulances for the French wounded. He referred also to the transport work at home, to the establishment of the Red Cross Hospital at Rouen, and to the distribution of garments undertaken by the Society. They were faced with the probability of having to provide for some time ahead, and he assured the Art Union that so far as care and foresight could go the money they gave to the Red Cross Society would be well spent.

A letter from an orderly to the Scottish Red Cross Hospital at Rouen, published about the same date, gives some interesting details of the work at a base hospital. "The first night or two," he says, "after we had shifted our quarters to the hospital we

all felt the cold very much, as sleeping under canvas at this time of the year was so different to what we were accustomed to at home. However, we soon got quite used to the conditions of camp life. The orderlies' duties commence at 6.30 A.M., when they assist the sisters with washing the patients and making beds. They have breakfast from 8 to 8.30, and then start to wash the patients' breakfast dishes and scrub their wards, &c. Dinner is from 12.45 to 1.30, tea 4.30 to 5, and then they are off duty at 8 P.M. Every alternate day they are off duty from 2 till 6 P.M. Every orderly has about sixteen patients, and when he attends to the individual wants and keeps his ward clean and tidy, and carries the food, he has a very busy time. We had a very happy time at Christmas; all the wards were beautifully decorated with evergreens and other decorations, and made a very pretty sight. The patients all received a pair of socks filled with an assortment of good things, thanks to the people at home for their kindness. The Scottish unit was included in the recipients of the Princess Mary gift, and we all feel deeply grateful to Her Royal Highness."

The proposal of the executive to send a hospital unit with personnel to work among the Serbian wounded, although received with approval by the British Foreign Office and the Serbian Legation, was discouraged by the British War Office on the ground that the Expeditionary Force would probably require an increased number of surgeons in the near future. The executive, therefore, decided to limit their assistance to Serbia to gifts of medical stores and equipment. Gifts of this nature to the value of £1,400 had been despatched through the Serbian Relief Committee by 20th January, and other stores were to be sent at a later date.

At the end of the month the Headquarters Organising Clothing Committee, while making an urgent appeal for warm articles of clothing, reported that since the war began there had been issued from the store at St. Andrew's Hall, Glasgow, of garments and other articles:—To France, 90,717; to Stobhill Hospital and Royal Infirmary, 19,823; to various other outlets, mainly local auxiliary hospitals and convalescent homes, 41,397; to Belgium, 14,880; to Serbia, 12,400; to Springburn Hospital, 10,800; to Indian hospitals, 6,760; to the Navy, 5,160; to the R.A.M.C., 4,720; to Canadian contingent, 310—total, 206,907. In addition,

there had been sent out 94 cases books and magazines, 82,000 cigarettes, 210 lb. tobacco, a large amount of writing materials, games of all kinds, walking sticks, &c., while up to the end of January nineteen ambulance waggons and nine ambulance motor cars provided by the Branch had been doing valuable work in and around Rouen. These cars then proceeded to the front by arrangement with the military authorities, and their place was taken by a further unit of twelve ambulance waggons. In addition, the executive offered to the War Office for the use of the Expeditionary Force a complete ambulance column of fifty motor ambulances, four staff cars, seven motor cycles, and one transport waggon. The offer was accepted, and it was expected that by the middle of February one hundred and twenty-five motor ambulance vehicles would have been despatched by the Scottish Branch to the seat of war. Further, the executive had sent through the British Committee of the French Red Cross a column of twelve ambulance waggons direct to the French lines, and two such waggons to the column going to the Colonial troops.

Early in February the executive committee of the Iron, Steel, and Ironmongery Trades of Scotland, which had received donations amounting to £1,250, purchased, through the Scottish Branch, two motor ambulances, which were shortly afterwards despatched to the front.

A deputation from the Dumbarton War Relief Committee inspected the local Red Cross Hospital and Cottage Hospital, both of which receive convalescent and semi-convalescent patients from Stobhill, and both were found highly satisfactory. A second Ayrshire ambulance, named the "Bonnie Doon," was despatched to the front.

On 8th February an exhibition of twenty motor ambulances, completing a column of fifty-five motor ambulances, five tender cars, and ten motor cycles presented by the Scottish Branch to the military authorities in London, was held in Blythwood Square, Glasgow; and the cars, which bore the name of the donors or of the district to which they belonged, afterwards paraded the streets.

A statement was issued on the 11th appealing for further woollen garments and other comforts, and acknowledging consignments from the western counties and from Glasgow. Up to

that date the sums received for collecting books were £129, 2s. 8d.; for boxes, £434, 4s. 3d.; and for Red Cross stamps, £180, 14s. 4d.

A cake and candy sale, organised by the Glasgow Branch of the National Commercial Temperance League in aid of the Scottish Branch, was held on 13th February in the St. Andrew's Mid Hall. Lady Chisholm was in the chair, and Mrs. Thomas Dunlop, wife of the Lord Provost, performed the opening ceremony. Sir Samuel Chisholm, in introducing her, said that it showed the vigour of that comparatively young society that in common with all ranks of the people at present it desired to do something to promote the success and comfort of the soldiers and sailors who were serving their country and their King. The channel it had chosen for its effort was the Scottish Branch of the Red Cross Society, which had rendered a service to the wounded which was beyond measure. The Scottish Branch had given no fewer than fifty motor ambulances to the army, and had in that way done more than could well be expressed to alleviate the sufferings and to make possible the recovery of the gallant men who had been wounded. The effort the National Commercial Temperance League was making that afternoon was to render some assistance to the Society in its excellent work.

It was announced on the 16th that Colonel Skinner, the Director of Medical Services at Rouen, had written to the Secretary of the Scottish Branch expressing his satisfaction with the assistance which the Branch had been able to render. The Branch had also received a report from the motor ambulance unit which had recently left Rouen for the front, Mr. Morgan, who was in charge of the unit under the military authorities, writing that the ambulances were doing excellent work.

His Majesty the King on 17th February inspected the motor ambulances presented to the War Office by the Scottish Branch of the British Red Cross Society. In addition to some fifty motor ambulances, there was the necessary complement of repair vans, store waggons, and motor cars for officers. Scotland, it was stated, had already subscribed over £140,000 in aid of succouring the wounded, of which some £80,000 had been expended in motor ambulances. Many of the vehicles bore the names of the cities or districts by which they were presented.

Almost immediately after inspection by His Majesty, the

column of motor ambulances furnished to the War Office by the Scottish Branch of the British Red Cross Society was called upon to undertake its first piece of work. To this column was entrusted the transport from Charing Cross Station to the various hospitals of the exchanged wounded prisoners who arrived from Germany on 17th February. The work was carried out with speed and efficiency. The Hon. Arthur Stanley, the president of the British Red Cross Society, wrote to the chairman of the Scottish Branch a letter of warm appreciation on the subject. "I am sure," he wrote, "it would interest you to know that the column of ambulances did some excellent work that night in helping to transport the exchanged wounded prisoners from Charing Cross Station to the various hospitals. The work was well done, and, I am sure, you and your committee will be glad to know that the first job which the ambulances have been asked to undertake was a very successful one indeed."

A report was received by the executive of the Scottish Branch of the arrival in Rouen of the third Scottish motor ambulance unit which had taken the place of the unit now working at the front. The transport officer in charge wrote that the unit had been installed in a camp which the military authorities had prepared for it near No. 11 Stationary Hospital. Since their arrival the ambulances had been kept busy in the work of transporting the sick and wounded soldiers.

It was announced on 25th February that the Scottish Branch had received an official letter of thanks from the War Office for the gift of the ambulance column inspected by His Majesty in the previous week. The letter stated:—"I am commanded by the Army Council to ask you to be kind enough to convey to the donors and all concerned an expression of the Council's grateful thanks for the very generous and patriotic gift of motor ambulances, and to inform them that the aid afforded by this munificent gift cannot fail to materially assist in the speedy alleviation of the sick and wounded in the field. I am to state that No. 8 Convoy, which these ambulances now form, proceeded overseas last week-end."

A report was received from the transport officer in charge of the motor ambulance unit at Rouen, in which details were given of the work carried out during a period of seven days from 10th February. During that period 843 wounded officers

and men were conveyed by the Scottish Red Cross ambulances, either from an ambulance train to one of the various hospitals at Rouen, or from hospital to a train taking the wounded homewards. Of the cases carried, 225 were stretcher cases, and 618 sitting patients.

On 26th February it was stated that since the war began there had been issued from the store at St. Andrew's Hall of garments and other articles:—France, 101,313; Stobhill Hospitals and Royal Infirmary, 21,473; various other outlets, mainly local auxiliary hospitals and convalescent homes, 44,535; Belgium, 23,474; Serbia, 13,850; Springburn Hospital, 10,990; Indian hospitals, 6,760; the Navy, 5,460; the R.A.M.C., 4,840; the Canadian contingent, 310—total, 233,005. In addition there have been sent out:—105 cases books and magazines, 11,780 cigarettes, 304 lb. tobacco, pipes, walking sticks, games of all kinds, writing materials, &c.

In the beginning of March the Branch was requested by the military authorities to make a further extension of the hospital at Rouen by the addition of 50 beds. The request, which constituted in itself the best appreciation of the work done by the hospital, was complied with, the number of beds being thus increased to 250.

On 12th March a statement was made with regard to the allocation of the funds collected by the organisers of the "Scottish Lassie" Ambulance Fund. Of the sum of £3,010 handed over to Sir George Beatson on 11th December by the Countess of Eglinton, £1,000 was used for the purchase and maintenance of a motor ambulance known as "The Scottish Lassie," £500 for the purchase of another motor ambulance known as "Scottish Lassie No. 2," £100 for the purchase of pathological plant for Springburn Relief Hospital, and £100 for the endowment of two beds at Springburn Relief Hospital. The balance was handed over for the general funds of the Scottish Branch. A further sum of £333, 7s. 1d., being the balance of this Fund, had been handed over to the hon. treasurers of the Scottish Branch, and had been allocated to the Motor Ambulance Fund. The two "Scottish Lassie" ambulances were included in the fifty cars gifted by the Scottish Branch to the War Office, and were at work in France.

On the 17th news was received that three of the motor

ambulances at the front had been destroyed by bombs from a German aeroplane, while a fourth was damaged. None of the personnel was injured, and there were no wounded in the ambulances at the time; but five refugees were killed and twenty-four injured. The red crosses painted on the top of the ambulances were disregarded by the aviators. Ambulances to replace those lost were at once dispatched by the Branch.

Statistics were issued on the following day showing the work done by the Transport Committee in the Western District of Scotland from the beginning of the war till the end of February. They showed that during that period the number of car and ambulance runs was 6,445, with a mileage of 66,746. The total number carried was 21,824, consisting of 17,456 sitting patients, 1,280 lying patients, 3,088 orderlies, officers, &c. Statistics, for obvious reasons, were not available for the work done behind the firing line, but weekly statistics were received by the executive from Rouen, and the last of these, covering the week ending at midnight on 11th March, showed that during that period 979 cases were handled, consisting of 303 stretcher cases and 676 sitting patients.

On 26th March a further appeal was issued, the articles most needed being socks, pillow cases, and coloured handkerchiefs. The total sums received to date for collecting books were £230, 13s. 1d., for boxes £566, 4s. 7d., and for Red Cross Stamps £184, 3s. 11d.; in all £981, 1s. 7d. There had been issued from the store at St. Andrew's Halls since the war began of garments and other articles:—To France, 131,413; to Stobhill Hospitals and Royal Infirmary, 24,323; to various other outlets, mainly local auxiliary hospitals and convalescent homes, 46,788; to Belgium, 23,524; to Serbia, 16,465; to Springburn Hospital, 11,110; to Indian hospitals, 7,910; to the Navy, 5,860; to the R.A.M.C., 4,840; to the Canadian Contingent, 310—total, 272,541. In addition, there had been sent out—114 cases books and magazines, 125,980 cigarettes, 373 lb. tobacco, pipes, walking sticks, games of all kinds, writing materials, &c.

REVIEWS.

The Anatomy of the Human Skeleton. By J. ERNEST FRAZER, F.R.C.S.Eng. London: J. & A. Churchill. 1914.

THIS is an attempt to present the bones, not as concretions of calcium salts from a rifled graveyard, but as they exist in the human body. Mr. Frazer has succeeded remarkably well in what is almost an original undertaking. He has made use of a vast number of illustrations, and of colour, in a very liberal manner. Most of these are excellent, and indeed one feels that in a work of this kind where originality of conception and design are so striking, and which solves, one might say, once for all, the question of osteology as it should be from, at least, the point of view of the medical student or the surgeon—in such a work, fault-finding would exhibit more a spirit of carping criticism than a real adjudication of merits and demerits. In some ways perhaps the work falls short of some of the more classic of the older osteologies in minute description of the bones themselves. This seems, however, from the point of view of those for whom the book is intended, unimportant in comparison with the living picture it presents of the bones, and their associated structures. Such is the attempt it makes, and such a picture, such a conception of the bones, must be the result of a study of the book. On the whole, one is inclined to think that the earlier part of the book is more successful than the later. The bones of the skull might have been presented more fully dressed in some instances; here and there a frozen section illustration in colour would help the understanding of relations, but, on the whole, there is little to cavil at. Descriptive anatomy, more perhaps than any other of the medical sciences, is hide-bound by convention. It is a matter of grave difficulty to escape from tradition. Heresy is as much an indiscretion here as in theological circles, but to the surgeon or student striving to grasp, not the significance of a tubercle or a groove, but rather

the bone as a part of the body he must care for, this work should be welcomed as a deliverance from the thrall of the middle ages. Much weary, profitless expenditure of labour was needed before the student of yesterday even understood that to make real progress in his study he must regard the bone as part of the region he was studying, must correlate the hard and soft parts. Here it is put before him from the first. One cannot help feeling that the thanks not only of those who study but of those who teach "bones" are due to Mr. Frazer for his very excellent manual.

The Blood: A Guide to its Examination and to the Diagnosis and Treatment of its Diseases. By G. LOVELL GULLAND, M.D., F.R.C.P.E., and ALEXANDER GOODALL, M.D., F.R.C.P.E. Second Edition. Edinburgh and London: W. Green & Son. 1914.

THE appearance of the second edition of Drs. Gulland and Goodall's work on the examination and diseases of the blood shows that it has fulfilled the purpose for which it was designed, namely, to give the student and practitioner "a concise and clear account of the diseases and diseased conditions of the blood and blood-forming organs." It is only two years since the publication of the first edition, but hæmatology is a subject in which movement is at present rapid, and the authors, who have thoroughly revised the whole book, have found it necessary to add about fifty pages to its former bulk. They have included in this edition accounts of new apparatus for counting and of dark ground illumination, descriptions of the oxydase reaction, anaplasmata, the views of v. Schilling-Torgau on the structure of the erythrocyte, and a discussion of the importance of the primitive forms of white cells in leukæmia. Their opinion of the recent methods of treatment in pernicious anæmia—salvarsan and splenectomy—is unfavourable, and they regard the views of its etiology maintained by Hunter as altogether untenable, considering it as a primary affection of the bone-marrow. The points in the volume which should commend it to the practitioner are the extremely practical manner in which the examination of the blood is

handled, and the importance given to clinical features in the description of its diseases. The sections on treatment are particularly full and helpful, and the illustrations are excellent.

Text-Book of General Pathology. Edited by M. S. PEMBREY and J. RITCHIE. London: Edward Arnold. 1913.

As explained in the preface, this is an attempt to treat pathological problems from a physiological standpoint. Chapter I is introductory and editorial. Disease does not depend upon the development of new properties but on defective correlation of physiological activities. Specialisation in the cellular life of higher animals results in greater complexity and delicacy, as is seen in the phenomena of inter-regulation and interdependence. Failures of these may to a certain extent be compensated, but of the workings of laws that regulate growth we know nothing. One process underlying disease which has no physiological basis is coagulation of the blood, but it is otherwise with degeneration, reaction, and new growth, all of which, in different degrees of complexity, underlie disease processes.

Chapter II, on the pathology of the blood, is by Professor Boycott. The total volume, regeneration after hæmorrhage, destruction of red cells and hæmolysis, transfusion, polycythæmia and its plethora, anæmic plethora, anæmia, leucocytes, and their destruction, leucocytosis, leukæmia, and coagulation, are all described; and there is a table giving the percentage and number per c.mm. of the different leucocytes in normal blood and in seven diseased conditions.

Dr. Ainley Walker contributes Chapter III on inflammation. To begin with, there is a general description of the phenomena of inflammation as they occur in vascular and non-vascular areas, and of the response of the lower animals to irritation. Throughout the animal series the reaction is essentially a cellular one and is designed to accomplish the removal or destruction of the irritant, and the repair of the injury. There follows a more detailed description of the events—including chemotaxis, adaptation, and suppuration—with an account of the

rôle of the leucocytes, of their varieties, and of the phenomena of phagocytosis and bacteriolysis. Retrograde and formative changes, the influence of the central nervous system, systemic changes, and the varieties of inflammation, complete the story.

The same authority contributes a short chapter on infection,—supplementary to the foregoing—and sub-divided as follows: The nature of infection, infective micro-organisms, transmissibility, predisposition, insusceptibility, paths of infection, “modes of spread” and of action, effects, specificity, symbiosis, latency, incubation, recovery, and relapse.

Immunity—the subject of Chapter V—is by Dr. Carl Browning. The methods of developing active immunity by cultures and toxins, and their practical application, are first considered, then antitoxic sera, their standardisation, and the practical application of antitoxin treatment. There is a short account of the theories regarding the constitution of toxins, the nature of the toxin-antitoxin reaction, and the formation of antibodies. Antisera are next considered, and hæmolysis, immune body, and complement. Opsonins, bacteriotropins, agglutinins, precipitins, and the deviation of complement are other headings of this section. Theories regarding the nature of acquired immunity, natural immunity, and anaphylaxis, complete the account. The subject is presented with admirable clearness, and a bibliography is appended.

Chapter VI, on degeneration, includes a short account of necrosis and calcification—the author Professor Lorrain Smith. Cloudy swelling is briefly considered. Owing to the instability of glycogen and our ignorance of its combined forms, glycogenic degeneration is not a clearly defined process. Some histological methods for its detection and some staining reactions are described. Fatty degeneration is readily produced experimentally, and to this our extended knowledge is due, as well as to available histological and chemical methods. Lipoids and masked fats are described and methods of investigating them. The causes of the degeneration are classified, special attention being paid to its occurrence in the walls of blood-vessels and lymphatics. It may originate directly from the cell protoplasm or indirectly by transformation of some constituent. Experiments show that in tissues that do not normally store fat, degeneration causes little or no increase of it in the tissue, but

in a storage tissue, such as the liver, the fat is definitely increased and must have been transported thither. When fatty degeneration occurs in the kidney the masked fat becomes visible as globules. Hyaline degeneration occurs in two forms—as a secretion by, or accumulation in, glandular cells, or as a deposition from inflammatory exudate. Amyloid and mucoid degenerations are briefly described.

Dr. James Ritchie contributes a short chapter on hypertrophy and atrophy, and also the chapter on tumours. Tumours are arranged in three classes—those originating in post-natal life from normal tissues, those arising from errors of development, and parasitic tumours of embryonic origin. In each class they are divided into innocent and malignant growths, and intermediate types. Site, age, occupation, and mortality are shortly noticed, and histioid and organised tumours described. Some attention is paid to the subjects of reduced mitosis, anaplasia, and metaplasia. Epiblastic, mesoblastic, hypoblastic, congenital, and parasitic tumours are considered. Etiology, the theories concerning it, and the question of infectivity, conclude the chapter, to which is appended a number of references.

The pathology of the circulation is from the pen of Professor Boycott. The myocardium and abnormalities of function, structure, and nutrition, hypertrophy, dilatation, the valvular mechanism, the pericardium, reflexes and sensations, the effects of respiration, diseases of arteries, blood-pressure, and œdema are the principal headings under which the subject is presented.

Dr. Mott writes the chapter on the nervous system. It is the longest in the book, and contains about a dozen illustrations. The first part deals mainly with histology and physiology. Degeneration and regeneration, the causes of disease, and the effects of degeneration on function are next considered. Then come cerebral localisation, inflammation of the meninges, the cerebro-spinal fluid, encephalitis, myelitis, congenital defects, tumours, disseminated sclerosis, aneurysm, syphilis, softening, hæmorrhage, and, finally, degeneration of the efferent tracts, the combined scleroses, parasyphilitic diseases, and a short list of works to be consulted.

Chapter XI on respiration is by Dr. J. S. Haldane. It is divided into two main sections, the first dealing with normal

respiration, and the second with abnormal interference. In the former the regulation of breathing, the conveyance of oxygen and carbon dioxide by the blood, the gaseous exchange in the lungs, and the respiratory regulation of the circulation, are the sub-headings; in the latter, the effects of excess of carbon dioxide, of deficiency of oxygen, of diminished atmospheric pressure, the causes of want of oxygen, the effects of deficiency of carbon dioxide and of excess of oxygen, interference with respiratory movements, with the general circulation, with the oxygen-carrying power of the blood, with the respiratory centre and nerves, and caisson disease.

Chapter XII on temperature is by Dr. M. S. Pembrey. The physiology of temperature is considered with special reference to its pathological relationships. The normal temperature, its daily variations, and the influence upon it of sleep, work, food, external conditions, age, race, and clothing, are discussed, then its regulation, the development of this power, and the regulation of the production and loss of heat. Disordered regulation, death from exposure to heat and cold, the effects of lesions of the nervous system, and the action of drugs and of micro-organisms follow; and the remainder of the chapter is occupied with fever.

Dr. A. F. Hertz contributes a chapter on the pathology of digestion. The saliva, ptyalism, xerostomia, and qualitative abnormalities occupy the first section; deglutition and the œsophagus the second, and the motor functions of the stomach the third—the last comprising tone, peristalsis, and vomiting, and containing several illustrative tracings. The secretory functions of the stomach, the motor functions of the intestines (illustrated), the pancreatic juice, bile, intestinal secretion, bacterial activity, and gases, form the subjects of the remaining sections, and the reader is referred to the author's work on constipation and allied disorders for further references.

Dr. M. S. Pembrey writes also Chapter XIX on metabolism. Some problems of nutrition being treated in separate chapters, the present one deals with nutrition in general under the headings external and internal exchange—the former concerned chiefly with diet, and the latter with internal secretions. In the first-named are sections dealing with the quantity and quality of food required, fasting, starvation, and fattening. In

the second, the ductless glands—and in connection with the ovaries we find the following noteworthy statement—"The effects of the generative organs upon the body and mind of the female are so far-reaching that on physiological grounds alone the artificial prevention of pregnancy is as much a crime against the woman as against the race." The chapter contains a considerable number of references to literature.

The remainder of the volume consists of four chapters on different metabolic disturbances, of one on the physiology and pathology of the kidney by Dr. J. H. Riffel, and of a short concluding chapter on death by Dr. James Ritchie. Of the chapters dealing with metabolic disturbances, the first is on those that result from liver disease, its author, Dr. A. E. Garrod. Jaundice, gall-stones, urinary pigments, the influence of disease on protein and carbohydrate metabolism, and the protective functions, are the principal headings, and there is a long bibliography. The same author contributes a chapter on alkaptonuria and cystinuria, also with numerous references. Diabetes mellitus and other changes in carbohydrate metabolism are discussed by Dr. A. P. Beddard, and gout by Professor Walker Hall.

We have merely indicated roughly the scope of the book. It is impossible to do justice to it in a short review, but we cannot commend it too highly, either to students or practitioners, and the subjects are presented so clearly and concisely that to the former especially it will be invaluable. We have noticed a considerable number of printer's errors, the only really important one in the index, where urobilinuria is referred to p. 610 instead of to p. 639.

Anæsthetics: Their Uses and Administration. By DUDLEY WILMOT BUXTON, M.D., B.S. Fifth Edition. London: H. K. Lewis. 1914.

No revolution in medicine is to be wished for more ardently than the elevation of the administration of anæsthetics to the plane of science with its certainty of results. The realisation of such a hope, however, becomes infinitely remote on account of the constant presence of the human factor with its elusive

variations. Administration thus conditioned must, it would seem, ever remain an art.

Workers such as Dr. Buxton are progressing surely towards the elimination of all but the irreducible, or rather irremovable, minimum of danger in anæsthesia, as the fifth edition of that author's *Anæsthetics*, now to hand, amply shows. The preparation of this new issue cannot have entailed much less labour and thought than the creation of the original. Almost every section has been rewritten; discarded teachings, apparatus, and methods have been rejected, while everything of importance in recent developments of the subject has been added. The intratracheal administration of ether, the use of oxygen and nitrous oxide in major surgery, spinal and local analgesia, and anæsthesia by colonic absorption, to mention only a few of the new features, are treated clearly and in detail. Numerous as the improvements are, they are so incorporated as to be in harmony with the design of previous editions. We have confidence in recommending this new issue of a standard work.

Indispensable Orthopædics: A Handbook for Practitioners.

By F. CALOT. Translated from the Sixth French Edition by A. H. ROBINSON and LOUIS NICOL. London: Baillière, Tindall & Cox. 1914.

THE fact that this book has, within the span of four years, reached its sixth edition speaks for itself. Being, with slight exception, the production of one man it is all the more interesting. In several places the author advocates a personal investigation of his methods carried out at Berck; a perusal of the book will induce many to accept his invitation. Every specialist in children's diseases and orthopædics should be familiar with the work done at Berck, and with the teaching of this centre.

The subjects dealt with are well arranged for close study as well as for reference. Much of the book is special pleading for the particular lines advocated. Many of the plans exclusively recommended are impossible of application, but they may be taken to represent the ideal to be aimed at by all.

The use of plaster of Paris is detailed, and all directions are

given so that the best results may be achieved. The section following this one includes the treatment of the external so-called surgical tuberculosis. The author scouts, with few exceptions, all cutting operations for the cure of surgical tuberculosis. Instead, he recommends injections of various emulsions and pastes, and he supports his views with a wealth of illustration. It may seem, perhaps, a little illogical to exclude multiple tubercle from this plan of treatment, as its adoption might lead to dissemination of the infection, yet it is just in such cases that operations are found to be also at fault. This admission paves the way for much criticism against an unfaltering conservatism in treating surgical tubercle. In this city tubercle is operated upon very frequently, and the results are not so disastrous as one might be led to believe by the perusal of this work. The case for operation is not presented, only the grounds for adopting Calot's principles are expounded. The chief reason against operation is the possibility of sinus formation, yet Calot cures sinuses by injections with ease. Those also who operate upon tubercle are not specially disturbed by the presence of a sinus, which, indeed, only rarely follows a radical operation.

While reference is being made to the treatment of the tuberculous sinus, it may be mentioned that Calot claims priority in the treatment of sinuses by pastes; this treatment has usually been associated with the name of Beck of Chicago.

An exceedingly clearly written and valuable section is that dealing with congenital dislocation of the hip and its relapses.

Operations on club-feet are dismissed as unnecessary; to cure such cases as are met with here without operation is impossible; the same criticism applies to rickety curvatures of the long bones.

The treatment outlined for osteomyelitis is, in the writer's opinion, quite inadequate, though it may be that the type of this disease met with in the West of Scotland is worse than that occurring in France.

Quite the best account which the writer has read of Abbott's method of treating scoliosis is to be found in this volume.

Incidentally, it may be mentioned that Calot recommends the administration of chloroform for the induction of anæsthesia in children—a view which will be shared by most surgeons.

The book is well illustrated, and comes up to the usual

standard of Messrs. Baillière, Tindall & Cox's publications. There are few errors in the volume, but figures 593, 595, and the text do not quite correspond.

The volume concludes with a synoptical and ordinary index, which add greatly to the utility of the work as one of reference.

A Manual of Physiology, with Practical Exercises. By G. N. STEWART, M.A., D.Sc., M.D. Edin., D.P.H. Camb. Seventh Edition. London: Baillière, Tindall & Cox. 1914.

THE last edition of this excellent *Manual* was published four years ago, and the present edition shows that considerable revision and addition have been carried out. The chapter on metabolism has been largely rewritten, and the more recent work on biochemistry has been incorporated. This chapter gives a very fair picture of the present position of the metabolism of carbohydrates, fats, and proteids, and discusses the statistics of nutrition (*i.e.*, balance sheets for nitrogen, carbon, &c.), and also, though briefly, the main points in dietetics. Other chapters have also been added to and altered to bring them up to date. The practical exercises set out at the end of the chapters are a noteworthy feature in this edition as in the previous ones.

In this book the student of physiology should find a sufficient store of reliable information, carefully set out in clear language, and with a good manual of histology to aid him should be able to obtain a sound grasp of the subject.

Physiological Principles in Treatment. By W. LANGDON BROWN, M.D., F.R.C.P. Third Edition. London: Baillière, Tindall & Cox. 1914.

DR. LANGDON BROWN'S little book has now so thoroughly established itself in the good graces of all practitioners who endeavour to guide their practice by the latest results of physiological discovery that the publication of a third edition, bringing its suggestive observations completely up to date, must

be very welcome to the profession. It has been revised with great care, and a comparison of any of its chapters with the corresponding chapter in the first edition will enable the reader to form an accurate estimate of the progress made in the last eight years. To this edition two additional chapters—on mechanical factors in indigestion, and on albuminuria and the treatment of nephritis—have been added. There can be no doubt that, like its predecessors, it will be very favourably received.

Treatment of Internal Diseases for Physicians and Students.

By Professor NORBERT ORTNER. Edited, with Additions, by NATHANIEL BOWDITCH POTTER, M.D. Translated by FREDERIC H. BARTLETT, M.D. Philadelphia and London: J. B. Lippincott Company. 1913.

THIS excellent volume is the second edition in English, and is revised and reset from the fifth German edition of Professor Ortner. It is made up of a copious and detailed account and discussion of the treatments advised for the several diseases of the various systems of the body. The editor amplifies, remarks on, and occasionally expresses opinions in opposition to those of the original author, and these, enclosed within square brackets, add considerably to the value and interest of the work. The drugs which may be of use are mentioned in connection with each condition, and the mode of use fully described and commented upon. Many prescriptions are given. As the editor points out in his preface, the author "very properly emphasises throughout the volume the importance of the mechanical, dietetic, climatic, hydrotherapeutic, and other extra-medicinal methods, with judicious reasons for those selected." To quote only one instance of this, in the section on the therapy of cardiac diseases, a detailed list is given of a series of baths which may be carried out at home in imitation of the baths of the Nauheim treatment. There is a good index.

Some such book as this, devoted wholly to treatment, is a desirable adjunct to the ordinary text-books, in which, it is to be feared, the subject of treatment is given, perhaps of necessity, only a secondary place.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

M E D I C I N E.

Clinical and Experimental Studies upon the Injection of Alcohol into the Gasserian Ganglion for the Relief of Trigeminal Neuralgia. By Charles Metcalfe Byrnes, M.D. (*Bulletin of the Johns Hopkins Hospital*, January, 1915).—The author from his clinical experience and experimental work on dogs has arrived at the following conclusions:—

1. In the treatment of trigeminal neuralgia, a single successful injection of alcohol into the Gasserian ganglion is followed by immediate relief of pain, and all the symptoms indicative of its complete physiological destruction.

2. Without a general anæsthetic the painfulness of the injection is not unbearable.

3. In experienced hands this form of treatment is without serious risk, and no fatalities have been recorded as a direct result of the injection.

4. Injections in man by exposure of the ganglion appear to be unwarranted except in rare cases. It is conceivable that in performing the subtemporal operation for removal of the ganglion, emergencies might arise which would demand prompt closure of the incision, or prevent further approach to the ganglion. Under these conditions, if the ganglion is accessible, direct injection might be practised.

5. If deep neural injections have been unsuccessful, and repeated attempts to inject the ganglion by the subcutaneous method have failed, an effort might be made to inject through the exposed foramen ovale before resorting to the subtemporal operation for removal.

6. It has been demonstrated by fractional injection that the extent of destruction may be, in a measure, limited to that portion of the ganglion from which the affected nerve trunk originates; and that not unfrequently the corneal fibres may be spared.

7. From the distribution of corneal anæsthesia following partial injections of the Gasserian ganglion, it appears that the upper and lower halves of the cornea receive separate innervation.

8. In cases of bilateral trigeminal neuralgia, injection of the ganglion possesses distinct advantages over other methods of radical treatment. Since anatomical continuity is not actually destroyed, and the motor nucleus is not directly affected, conditions are favourable for recovery of motor function;

sensation would be permanently lost if the ganglion is completely destroyed. Thus by allowing sufficient time for regeneration in the motor root bilateral ganglionolysis might be safely practised.

9. Clinical observations have been too recent to give reliable information as to the permanency of relief after ganglionic injection. Experimental studies indicate that the ganglion can probably not be completely destroyed by a single injection of alcohol. The author believes that complete destruction can be accomplished by repeated injections.—ARCHD. W. HARRINGTON.

The Value of Typhoid Vaccines in the Treatment of Typhoid Fever. By E. B. Krumbhaar, M.D., and Russell Richardson, A.M., M.D. (*American Journal of Medical Sciences*, March, 1915).—The authors' paper is based on 93 cases of typhoid fever treated by typhoid vaccine. Forty-four cases were treated by Mulford's stock typhobacteria. The total dosage varied from 50,000,000 to 1,650,000,000 given in one to five doses. The average total dosage per patient was 926,000,000. There were 4 deaths, 3 relapses, and 12 complications (5 hæmorrhages, 2 perforations, 2 phlebitis, 1 cystitis, 1 periostitis, 1 abscess). Thirty-three cases were treated with a vaccine prepared from the "Rawlings" strain of typhoid bacilli in total doses varying from 200,000,000 to 1,450,000,000 (one to three doses). The vaccine was prepared after Wright's method. The cultures were grown on plain agar, and suspended in sterile normal saline solution. After shaking and counting the suspension, organisms were killed by a temperature of 60° C. for one hour. The vaccine was made with 1,000,000,000 organisms to each cubic centimetre and 0·3 per cent of lysol added. The case mortality was 3·2 per cent. There were two relapses occurring after vaccination.

The only change in making the vaccine for the last 16 cases was that the organisms were killed by a temperature of 56° C. for one half-hour. The total dosage ranged between 850,000,000 and 3,350,000,000, the average being 1,640,000,000 in one to five doses. There were no deaths, no relapses, and 1 complication—a broncho-pneumonia. In 16 control cases occurring at the same time there was 1 death, 1 relapse, and 2 complications (hæmorrhage and perforation).

The authors have come to the following conclusions:—

1. The curative use of typhoid vaccines in the course of typhoid fever in order to stimulate further antibody formation has a logical theoretical basis. Practical proof of its value is afforded by the rise in agglutinin curves after such vaccination.

2. The proper use of vaccines in the treatment of typhoid fever has been found clinically to be harmless, and usually to produce beneficial results. They rarely cause any noticeable aggravation of symptoms beyond a fleeting rise of temperature. Relapses and complications are diminished in frequency but not prevented. Increase in size of the spleen has not been noted.

3. The best results are obtained if the injections are begun early, especially before the tenth day. Late in the course of the disease, except in selected cases, the value of vaccines, both theoretically and practically, is more dubious. In the chronic complications, such as periostitis and cholecystitis, good results have been obtained by other investigators.

4. The contra-indications for vaccine treatment of typhoid fever are not yet clear.

5. The best dosage has not yet been determined. The more severe the

disease, the smaller and more cautious should be the dosage. With the authors' method of preparation the best initial dose, for an average adult, was 500,000,000. If this proved to be the proper amount, two or more larger doses were given usually at three-day intervals.—ARCHD. W. HARRINGTON.

On the Occurrence of a Bilateral Extensor Response in States of Unconsciousness. By C. O. Hawthorne, M.D. (*The Polyclinic*, October, 1914).—Dr. Hawthorne discusses the clinical significance of a bilateral extensor response when the patient is in a state of coma or unconsciousness.

It does not invariably indicate a lesion or lesions of the pyramidal tracts or of one pyramidal tract, or an intracranial lesion. The alternative diagnosis is that unconsciousness *per se* may be sufficient explanation of the bilateral extensor response. As presumptive evidence in support of this proposition he puts forward the following facts:—

1. An extensor response can sometimes be obtained in a healthy person during sleep.

2. It may be obtained during an epileptic fit.

In both these conditions we have functional changes in the nervous system, but not lesions of the pyramidal tracts.

3. Certain drugs in full doses may produce a bilateral extensor response, hyoscine and strychnine, the former by inhibiting the action of the upper motor neurone, the latter by increasing the excitability of the lower neurone.

Chronic joint disease may also be associated with the extensor type of response.

In various specific fevers, such as enteric and scarlet fever, diphtheria, pneumonia, and in uræmia, septicæmia, pyæmia, and tetanus, an extensor response—apart from the evidence of gross organic disease—may be obtained. However, as in any of these cases there might have been degenerative changes in the pyramidal tracts, they are not included in the present argument.

An account of four clinical cases is given, supporting the contention that a bilateral extensor reflex can be got in cases of unconsciousness without organic cerebral disease, and that coma, however produced, may be sufficient to establish in the central nervous system the conditions upon which the extensor response depends.—JAS. SCOTT.

SURGERY.

The Local Employment of Iodine in Suppurative Peritonitis. By F. T. Fort (*American Journal of Surgery*, February, 1915).—The intraperitoneal application of a solution of iodine in all forms of peritonitis was first suggested to the author by Dr. Eugene J. Johnson. This worker, when dealing with acute cases, such as ruptured appendix, gastric ulcer, or gall-bladder, pours in a pint or two of 2½ per cent iodine in alcohol as soon as the abdomen is opened, and makes sure that it penetrates to every pocket where infection is likely. It does not seem to cause more adhesions than the processes of inflammation do—indeed, there is an idea that it counteracts the latter to some degree in this respect. As a result of this treatment the mortality among cases of suppurative peritonitis under Johnson's care has been reduced considerably.

The author relates details of six cases in his own practice, all females. Three of the patients were suffering from appendicitis, and three from pyosalpinx. Four had diffuse peritonitis, and in two the peritonitis was circumscribed. Intraperitoneal application of iodine-alcohol solution was adopted in addition to the usual treatment. The quantities varied from 6 to 16 oz. Recovery was almost uneventful in each case.—CHARLES BENNETT.

Traumatic Forward Subluxation of the Shoulder. By Walter M. Brickner (*American Journal of Surgery*, February, 1915).—Although the occurrence of primary, uncomplicated, traumatic subluxation of the shoulder may not have been definitely accepted hitherto, yet the author believes that this condition is a clinical entity. It is an occasional cause of shoulder disability, and may in haste be labelled “stiff and painful shoulder.” Mild violence has been sufficient to bring it about in certain cases. The physical signs are—prominence of the head of the humerus in front, and corresponding depression behind, with slight or no flattening over the deltoid. There is usually pain in the shoulder, radiating downwards, and inability to abduct the arm, while rotation may be easily performed.

The author describes three cases occurring in women, and the condition in these was cured by abduction continued for several days.—CHARLES BENNETT.

OBSTETRICS AND GYNÆCOLOGY.

Chronic Fixed Retroversion of the Uterus: A Plea for Operation.—B. Solomons (in *Dublin Journal of Med. Science*, March, 1915) recommends that a uterus, when fixed by adhesions in a retroverted position, should be freed by operation without the waste of time entailed by douches, tampons, electricity, massage, *et hoc genus omne*. Operation is best, that is most safely and easily carried out, by the abdominal route; rough methods are apt to lead to tearing of the rectum or some other part of the bowel, and large adhesions may bleed badly when divided. In Trendelenburg's position the uterus is drawn up by means of a stitch passed deeply into the fundus as less likely to tear out than a forceps grip; adhesions are divided and tied where necessary. Pus tubes are resected or removed, great care being necessary to avoid infecting the abdomen. In any case, pus should be secured in sterile tubes or on swabs for the making of vaccines; appendicular troubles are to be looked for and treated. The uterus can then be fixed to the abdominal wall by whatever method the operator prefers—ventral suspension, according to Kelly's directions, or any of the numerous intraperitoneal operations for shortening the round ligaments. Where there has been exudation of pus, or much oozing from separated adhesions, drainage should be established. This may be secured by means of iodoform gauze brought through an opening in the posterior fornix and out through the vagina, or else by means of gauze through the abdominal wound. The former is to be preferred, as there is less pain on removing the gauze, and there is less risk of hernia and the convalescence is shorter, and drainage is equally efficient in either direction. Fowler's position should be maintained for several days. The gauze in purulent cases is removed in forty-eight hours; when inserted for oozing it is removable in twenty-four hours.

In cases of pregnancy the dangers are too great to risk expectant treatment; induction of abortion is unnecessary. Operation should be performed as soon as possible, and the risk of abortion is slight.—E. H. LAWRENCE OLIPHANT.

Hollowing of the Stump in Subtotal Hysterectomy.—Rouville, of Montpellier (in *Archives Mens. d'Obstétrique et de Gynécol.*, July, 1914—delayed in transmission), discusses the merits of total or subtotal hysterectomy, and declares himself a partisan of the partial operation in suitable cases. There are forms of cervical leucorrhœa which persist somewhat intractably after hysterectomy, such as in women for whom the uterus has been removed on account of gonorrhœal salpingitis. In such cases the cervix should be removed with the uterus, but many forms of disease do not require the radical operation; and to avoid some of the troubles resulting from the presence of the cervical stump, Dr. Rouville proceeds to bore out the interior of the stump systematically. To permit of this he ligatures the uterine arteries as low as possible, immediately below the origin of the superior vaginal arteries. By taking out a complete ring from the whole length of the cervix, drainage can be obtained when it is thought advisable. In any case, cancer from the interior of the cervix—the commonest form after ablation for fibroids—will not occur. The article is illustrated.

—E. H. L. O.

Dermographism in Pregnancy.—Professor Treub, of Amsterdam (in *Arch. Mens. d'Obstét. et de Gynécol.*, July, 1914), discusses this condition in which the skin preserves for a considerable time the trace of pressure marks. Treub describes some cases and cannot explain the anomalous features, such as a woman on whom pressure marks persisted as white areas during narcosis, but not in the waking state; while, in others, the anæsthetic made no difference. In some, the pressure mark shows white; in others, red; in some, white or red, according as the patient is lying or standing; in others, again, there is a red area with a white halo. The article is illustrated with photographs.

—E. H. L. O.

A Case of Carcinoma Uteri benefited by Radium Emanation. Sir John Moore (in *Dublin Journal of Med. Science*, March, 1915) relates a case of carcinoma of the uterus in which Dr. Kidd had pronounced operation to be impossible.

Mrs. H., from 23rd October to 29th December—that is, sixty-seven days—was under treatment for thirteen and a half days. During this time she had six old capillaries in a little metal case inserted into the cervical canal. They contained an average of 4.17 millicuries. She received altogether 6,602 milligram hours of radiation. Six needles were inserted eleven times—twenty-four each into the anterior and posterior lips of the cervix and fornix, and eighteen into the vaginal wall. Posterior fornix and lip of cervix, treated for four days twenty-one hours, received 1,872 milligram hours—average, 16 millicuries. Anterior fornix and lip of cervix, treated for six days twelve hours, received 2,162 milligram hours—average, 13.8 millicuries. Vagina, treated for four days four hours, received 1,218 milligram hours—average, 8.1 millicuries. Cervical canal and uterus, treated for thirteen days six hours, received 1,350 milligram hours—average, 4.1 millicuries per hour.

The constitutional febrile disturbance which followed the various *séances* was noteworthy. Dr. Stevenson suggests that the rapid disintegration of the cells of

the new growth, and the absorption of the resulting *débris*, may account for this. The patient left the hospital considering herself cured. There was certainly remarkable shrinking in the growth; the pain and hæmorrhage and foul discharge had ceased, and the patient's general condition was excellent.

In the discussion which followed the reading of the paper at the Royal Association of Medicine, Ireland, some doubt was expressed as to the nature of the rays—whether beta or gamma—which produced the effect. The president, Dr. Lindsay, thought it possible that in all the radio-active elements a stimulant action might be present, and suggested the possibility of a too feeble application of radium stimulating cancerous growths.—E. H. L. O.

Two Cases of Hysterectomy for Ante-partum Hæmorrhage.

—Dr. Stevens (in *Proceedings of the Royal Society of Medicine*, January, 1915) related two cases at a meeting of the Obstetrical and Gynaecological Section in which he had performed hysterectomy. The first patient was a xii-para, aged 37, admitted in the twenty-eighth week of pregnancy, with the history of a severe hæmorrhage a few hours earlier. Examination revealed the presence of the placenta all over the lower segment of the uterus. The os uteri admitted two fingers, and a Champetier de Ribes' bag was introduced through the placenta. During this procedure about two pints of blood were lost. Two hours later the patient became collapsed though no more bleeding had occurred, but she quickly recovered with morphia and a subcutaneous infusion of a quart of saline. The pains which had been induced by the bag passed off, and eighteen hours after admission the cervix was not dilated, and the child was dead, and there was no bleeding. Mr. Stevens accordingly proceeded to perform a panhysterectomy. This was done under morphia and atropine, urea-quinine hydrochloride skin infiltration, and the smallest amount of open ether which would ensure unconsciousness. Saline to the extent of a quart under each breast was infused during the operation, which was particularly easy, the incision being made just at the junction of cervix and vagina. Not more than 3 oz. of blood was lost. The uterus was removed unopened, and the patient made an uninterrupted recovery.

The second patient was a ix-para, in her thirtieth week of pregnancy, admitted with a history of severe bleeding six hours previously. The internal os was closed, and would not admit a dilating bag after rupture of the membranes. Pituitary extract was given, but bleeding recurred, and, as the uterus felt hard, in spite of the absence of contractions, internal (concealed) hæmorrhage was diagnosed. Operation was performed by the same procedure as in the former case. The patient did well after some trouble with the abdominal wound.

In the discussion which followed, several speakers suggested that, in the first case, podalic version might have obviated the operation. Dr. Spencer thought Cæsarean section might have been performed in the case of accidental hæmorrhage, and so the uterus might have been saved.—E. H. L. O.

Cæsarean Section Performed Late in Labour.—Zárate, Professor at Buenos Ayres, contributes a paper (to the *Archives Mens. d'Obstétrique et de Gynéc.*, August, 1914; published January, 1915) in which he proposes to extend the indications for Cæsarean section to cases of women who have been long in labour, and have been submitted to numerous examinations. Schauta, for example, makes three groups of his patients admitted with contracted pelvis. In the first, he places aseptic cases admitted with the membranes unruptured; in the second category, he places neglected cases with the membranes long

ruptured, but not having been submitted to examination; and, in the third category, he places cases evidently or only possibly septic. Schauta reserves the classical Cæsarean section for the first category only, treating the others by Porro's operation or craniotomy, or some extraperitoneal method.

Zárate relates four successful operations on women who had been long in labour, including one with gonorrhœal vaginitis, in whom the membranes had been ruptured for sixty-two hours. He describes the technique of the operation, which is briefly as follows:-- The abdominal wall is sterilised with iodine; the woman is placed on a table capable of being put in Trendelenburg's position; median incision, about 20 centimetres; exteriorisation of the uterus. An assistant then seizes the edges of the abdominal wound with two forceps, which are crossed so as to allow of the wound being kept closed by another forceps grasping both walls. The wound is covered with compresses, and the uterus is then covered with a sheet and the woman is placed in Trendelenburg's position. The uterine incision is then made through the sheet, which an assistant keeps tightly applied to the uterus by holding it down on the fundus and by pulling on its lower edge, thus keeping close contact during the retraction of the uterus. Compresses are used to aid in extracting the placenta and membranes. The cavity of the uterus is swabbed with tincture of iodine if the os is dilated; if not, a piece of iodoform gauze is passed down through the cervix, and the uterine cavity is packed. The uterine wound is iodised. Before proceeding to suture the uterine wound the sheet is removed, and the surgeon and assistants change their gloves and take fresh instruments. After the first layer of stitches the wound is moistened with iodine solution before the Lembert sutures are passed. A piece of gauze is placed over the uterine wound in the form of a bag, with a thread passing inside to its upper end so as to invert it during removal; its lower end comes out at the lower end of the abdominal wound, not so much as a drain, but to protect the abdominal cavity. To ensure this, an assistant must immobilise the uterus during the suturing of the abdominal wound. This gauze is removed in forty-eight hours, to be followed by a glass or rubber drain where necessary; the intra-uterine gauze is removed in twenty-four hours. He hopes to be able to do without the abdominal gauze.—E. H. L. O.

DISEASES OF THE EYE.

Glaucoma and the Blood-Pressure. By Alexander MacRae (*The Ophthalmoscope*, April, 1915).—During the last ten or fifteen years a great amount of work has been carried out upon the relationship of glaucoma to the blood-pressure. The experiments of Henderson and Starling upon the intra-ocular tension are well known. Professor Starling believes that the production of the intra-ocular fluid is entirely dependent upon a process of filtration, so close was the correspondence between the blood-pressure and the intra-ocular tension.

MacRae (formerly of Edinburgh, now of Aden) commences with a short description of the work of a number of observers. The results have been completely contradictory. Terson and Campos, in 1898, found that many glaucoma patients have not a high blood-pressure, and that extreme degrees of glaucoma may co-exist with normal blood-pressure. They used Potain's

sphygmomanometer. With the same instrument Joseph, in 1904, found a high blood-pressure in 18 cases of glaucoma. Potain's sphygmomanometer is now regarded as an unreliable instrument. Bajardi, working in 1900 with the Riva Rocci instrument with the narrow armlet, had also obtained a high blood-pressure in 50 per cent of 56 glaucoma cases. It is now known that the narrow armlet is unreliable.

Frenkel, in 1906, was the first to employ control cases along with the glaucoma cases. With Laulanie's apparatus he found the average pressure much higher in 15 glaucoma cases than in 35 control cases. His assistant, Laquiez, arrived at the conclusion that a high blood-pressure is present in every case of glaucoma. The same may be said of any disease of the middle-aged.

Krämer, using Tauber's modification of the Gärtner instrument, which is fairly accurate, found very little difference, some being higher, and others lower. His research was published in 1910. In the following year Kümmell, with the Riva Rocci apparatus with a broad cuff, found a much higher average blood-pressure than among the control cases. The author supplies a table of the cases from the last two workers arranged in groups of decades of age. By this means it is seen that both Krämer and Kümmell agree in having a higher average blood-pressure in three out of the four decades, while in the fourth decade (40 to 49 years of age in Krämer's cases, and 70 to 79 years of age in Kümmell's cases) the control cases show the higher blood-pressure.

MacRae's cases were obtained in the out-patient department of the Eye Clinique of the Edinburgh Royal Infirmary. Indoor cases were excluded, as the blood-pressure falls after lying in bed. Martin's modification of the Riva Rocci apparatus was used. In the glaucoma series all secondary glaucomas were excluded. Controls of similar ages were taken at the same time of the day, and at the same time after food had been partaken of as for the glaucoma cases. There were 20 cases of primary glaucoma, and 71 control cases.

The results are tabulated according to decades of age, and show that the average blood-pressure is lower in glaucoma cases than in the control cases, except at one age period. This last group contained one case of very high blood-pressure, which, had it not been included in the glaucoma cases, would have been lower at all age periods than in the controls. This was a case of kidney and arterial disease, with a very high blood-pressure. Such cases must be included among the glaucoma cases; and it would be unfair to exclude them from the control cases. To obtain accurate statistics large numbers of cases required to be examined, and, if possible, this should be undertaken by the same observer so that the personal equation, and the variability of sphygmomanometers, may be excluded.

Glaucoma is not a common disease in Scotland. The West of Scotland agrees with the East in this matter. The instrument is also open to criticism. Many believe that the Riva Rocci sphygmomanometer gives the actual blood-pressure in the brachial artery. On the other hand, a large number hold that the condition of the artery wall must be taken into account, as the readings give arterial tension *plus* the resistance of the artery to obliteration of its lumen. These observers consider that it is impossible to state how much of the total reading is due to the blood-pressure alone, and they claim, therefore, that there is no certain method of testing the blood-pressure clinically. The author believes that this view is coming to be generally held. If this is accepted, the glaucoma studies must await further improvements, in that this is essentially a disease of middle age and upwards.

The third section of this interesting paper is given to a review of the evidence so far accumulated on the question of the relation between the blood-pressure and the intra-ocular tension. There are a few scattered cases on record of glaucoma occurring in patients with a very high blood-pressure in which miotics were without effect until venesection had been performed. Such, however, is a very rare necessity. Authors who state that the blood-pressure is always raised in glaucoma without any observation of controls cannot be accepted as evidence.

MacRae points out that the curves of eye and blood-pressure were not always parallel in Henderson and Starling's experiments. "They found, for example, that stimulation of the Gasserian ganglion caused a lowering of eye tension without any change in the blood-pressure." Wesseley, employing intravenous injections of adrenaline, found that the effects on the blood- and intra-ocular pressures were inconstant. Sometimes both rose together, at other times one rose and the other fell. Wesseley, in a further series of experiments, found on stimulating the cervical sympathetic, that the intra-ocular pressure decreased by about one-third, while no change occurred in the blood-pressure.

To find, if possible, in the human subject any clinical evidence of the relation between blood-pressure and eye-pressure such as Henderson and Starling found in animals, MacRae devised the following experiments:—Young patients were used so that thickening of the arterial wall could be excluded. The eye-pressure was measured with the Schiötz tonometer. With this instrument there is a fall in successive readings, but after a few minutes rest the eye recovers. The Riva Rocci sphygmomanometer was used for the blood-pressures. The two readings having been taken, the patients were made to run up and down stairs until the blood-pressure had been considerably raised. In only one case out of three was the eye-tension raised, and that was a matter of 1 mm. of Hg. The same patient was tried a week later, when the eye-tension was found lowered by the same amount, showing that 1 mm. was within the error of the tonometer. The second patient showed no change, and the third patient had a lowering of the eye-tension. "These experiments lend no countenance to the view that the eye-pressure in man alters with the blood-pressure."

Hertel's experiments are also of great importance. He introduced solutions of different salts into the veins of rabbits; Schiötz tonometer for the eye, and canula in an artery for blood-pressure. The results showed that the eye tension could be altered enormously in each direction, without any alteration of the blood-pressure, by merely altering the strength of the solution introduced into the blood-stream. Fischer was able to burst the very tough ox's eyes by merely placing them in a weak solution of acid.

The author concludes with the opinion that the blood-pressure helps to maintain the eye tension, but that the intra-ocular pressure may be affected in many ways which have no connection with, and no effect on, blood-pressure; and, conversely, the blood-pressure may alter greatly without any corresponding effect on eye tension being observable. He doubts that the blood-pressure has any influence in the causation of glaucoma.

MacRae considers that the solution of the problem may be a chemical one, connected in some way with osmosis. "Hill's theory of a local toxæmia, bacterial or otherwise, producing chemical changes in the colloids of the eye, which cause them to absorb water, seems to me to meet every factor in the case." The references can be found in the original paper by anyone wishing to work at this important subject.—W. B. INGLIS POLLOCK.

Books, Pamphlets, &c., Received.

The Practical Medicine Series, under the general editorial charge of Charles L. Mix, A.M., M.D., and Roger T. Vaughan, Ph.B., M.D. Series 1914. Chicago: The Year Book Publishers. (Price of ten volumes, \$10.00.)

Vol. VII.—Obstetrics, edited by Joseph B. de Lee, A.M., M.D., and Herbert M. Stowe, M.D. (\$1.35.)

Vol. VIII.—Materia Medica and Therapeutics, Preventive Medicine, Climatology, edited by George F. Butler, Ph.G., A.M., M.D.; Henry B. Farill, A.B., M.D.; and Norman Bridge, A.M., M.D. (\$1.50.)

Vol. X.—Nervous and Mental Diseases, edited by Hugh T. Patrick, M.D., and Peter Bassoe, M.D. (\$1.35.)

A Practical Handbook of Surgical After-Treatment, by Alan H. Todd, B.Sc., M.S.Lond., F.R.C.S.Eng. London: Edward Arnold. 1915. (4s. 6d. net.)

The Inevitable Complement: The Care and After-care of Consumptives, by Harold Vallow, M.D. London: John Bale, Sons & Danielsson, Limited. 1915. (1s. 6d. net.)

A Text-Book of Radiology, by Edward Reginald Morton, M.D., C.M. Trin. Tor., F.R.C.S.Ed. With 26 plates and 72 illustrations. London: Henry Kimpton. 1915. (7s. 6d. net.)

Text-Book of Public Health (late Husband's), by E. W. Hope, M.D., D.Sc. Eighth edition, revised and enlarged. Edinburgh: E. & S. Livingstone. 1915. (15s. net.)

An Introduction to Midwifery: A Handbook for Medical Students and Midwives, by Archibald Donald, M.A., M.D., C.M. Ed., M.R.C.P. Lond. With numerous illustrations. Seventh edition, revised. London: Charles Griffin & Co., Limited. 1915. (5s. net.)

A Handbook of Medical Jurisprudence and Toxicology for the use of Students and Practitioners, by William A. Brend, M.A.Camb., M.B., B.Sc.Lond. Second edition, revised, with frontispiece. London: Charles Griffin & Co., Limited. 1915. (8s. 6d. net.)

Radiography, X-Ray Therapeutics, and Radium Therapy, by Robert Knox, M.D. Edin., M.R.C.S.Eng., L.R.C.P.Lond. With 64 plates, 246 illustrations in the text, and a frontispiece in colour. London: A. & C. Black. 1915. (25s. net.)

Husband's Students' Pocket Prescriber and Guide to Prescription Writing. Revised in accordance with the *British Pharmacopœia*, 1914, by David Mitchell Macdonald, M.D. Fifth edition. Edinburgh: E. & S. Livingstone. 1915. (1s. 6d. net.)

A Text-Book of Medical Jurisprudence and Toxicology, by John Glaister, M.D., D.P.H.Camb., F.R.S.E. Third edition. With 133 illustrations and 1 coloured plate. Edinburgh: E. & S. Livingstone. 1915. (15s. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDED 24TH APRIL, 1915.**

	WEEK ENDING				
	Mar. 27.	April 3.	April 10.	April 17.	April 24.
Mean temperature, . . .	41·4°	41·2°	43·3°	46·2°	45·7°
Mean range of temperature between highest and lowest,	11·6°	15·4°	11·4°	11·5°	13·4°
Number of days on which rain fell,	3	4	6	6	5
Amount of rainfall, . . ins.	0·22	0·60	0·84	0·15	0·50
Deaths (corrected), . . .	450	477	468	458	415
Death-rates,	21·8	23·1	22·6	22·1	20·1
Zymotic death-rates, . . .	3·4	5·0	3·9	3·6	3·5
Pulmonary death-rates, . .	6·0	8·2	6·1	6·5	5·0
DEATHS—					
Under 1 year,	85	112	94	84	109
60 years and upwards, . .	99	105	112	116	92
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles,	14	31	30	16	20
Scarlet fever,	6	5	4	3	5
Diphtheria,	4	2	5	5	1
Whooping-cough,	46	60	37	47	44
Enteric fever, . . . . .	...	5	2	...	2
Cerebro-spinal fever, . . .	5	4	3	4	5
Diarrhoea (under 2 years of age),	5	5	7	7	6
Bronchitis, pneumonia, and pleurisy,	98	83	106	102	76
CASES REPORTED—					
Small-pox, . . . . .	...	...	...	...	...
Cerebro-spinal meningitis, .	12	8	7	7	7
Diphtheria and membranous croup,	30	35	33	23	34
Erysipelas,	23	17	26	24	24
Scarlet fever,	125	117	79	100	89
Typhus fever, . . . . .	...	...	...	...	...
Enteric fever,	5	3	2	7	5
Phthisis,	63	64	40	65	56
Puerperal fever,	9	6	3	5	7
Measles,*	237	253	258	492	404

* Measles not notifiable.

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ORIGINAL ARTICLES.

SIMPLE PEPTIC ULCER AND MALIGNANT DISEASE
OF THE STOMACH.

BY WILLIAM MACLENNAN, M.B.,
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Physician, Glasgow Royal Maternity and Women's Hospital ;
late Examiner in Systematic and Clinical Medicine,
Glasgow University.

DIGESTIVE derangements form a very large proportion of the diseases with which the practitioner has to deal. The stomach is almost the only organ over which we have complete control, and, perhaps, for this very reason it is the best abused of all our organs. Little wonder that it becomes so frequently disordered and the seat of disease !

And yet, though digestive derangements are among the commonest we have to deal with and are responsible for so much suffering, they are, as a rule, the least studied and understood of all maladies. It is because we so often fail to give relief to our patients suffering from digestive troubles that they ultimately grow weary of our unsuccessful treatment and pass into the hands of the quack.

To arrive at a correct diagnosis of a gastric complaint, we

require to carry out, in many instances, a most exhaustive examination. Admittedly, time and opportunity for this may be lacking to the harassed practitioner. And yet a comparatively simple examination may suffice to elucidate a condition which seems obscure, and enable us at least to treat such cases with some confidence of success.

The chief causes of difficulty in the diagnosis of digestive derangements may be thus summarised:—

1. *Digestive derangements are not infrequently due to general systemic and constitutional ailments.*—Every complaint of gastric disturbance should not at once be set down to a local disorder of the stomach until a complete examination of the patient excludes other causes. It is not an uncommon error to find that nausea, vomiting, and gastric pain are wrongly ascribed to a local lesion in the stomach, when, indeed, these symptoms are only an expression of a passive hyperæmia, due to failure of compensation of the heart or to some general toxæmia. The acute gastric trouble which so frequently complicates uræmia and Grave's disease sometimes forms the dominant symptom of these disorders.

2. *The interdependence of function and the contiguity of the digestive organs.*—Certain disorders of the liver, often overlooked, are the real cause of gastric disorder. Thus, cirrhosis of the liver, associated with vomiting and hæmatemesis, is frequently diagnosed as gastric ulceration. More commonly still, cholelithiasis and cholecystitis are not appreciated as causes of "chronic dyspepsia," while certain intestinal diseases, more especially chronic appendicitis, indicate their presence principally by symptoms referable not to their site of origin but to the stomach.

3. *The diagnosis and treatment of these conditions symptomatically.*—The symptoms of gastric disorder are common to many different lesions of the digestive apparatus. What is really meant by "acid" or "flatulent" dyspepsia? Nausea, vomiting, pain, and disorder of appetite are associated with very different conditions; and yet these and other symptoms are diagnosed and treated as if they were separate affections. No more fallacious method of diagnosis of gastric disease could be adopted than that dependent on symptomatology. Thus, nothing is commoner than to find a case of "acid dyspepsia"

assigned to a wrong cause. Sometimes the most pronounced symptoms of acidity are not due to a hyperchlorhydria, but actually to a diminution or total loss of free hydrochloric acid in the gastric juice. If it be assumed, without verification, that the symptoms are due to an excess of hydrochloric acid, a grave error in diagnosis and treatment will certainly be made.

In every case of persistent gastric disorder, not only must the symptomatology and the clinical history be considered, but a careful physical examination of the stomach be correlated with an investigation of the gastro-intestinal chemistry. I think it as unscientific to attempt to form a sound opinion of a case of gastric derangement without combining all these methods of investigation as it would be to make a diagnosis of a renal disorder without chemical and microscopic examination of the urine.

SIMPLE PEPTIC ULCER.

From the clinical point of view, we have two common varieties—the *acute* and the *chronic* ulcer. The former may undergo rapid healing; but not infrequently, by lapse of time and lack of care, changes occur in it which cause induration, and it may assume the characters of the chronic variety.

Of the better understood *etiological factors* little need be said. Gastric ulcer occurs at an earlier *age* in women than in men, and *sex* influence is seen rather in the *situation* of the ulcer than in the frequency of its occurrence. Ulcers inside the viscus are more commonly met with in women, while the duodenal ulcer is much more frequently seen in men.

Every condition which may be included in the term *bad hygiene* may be regarded as a predisposing factor in peptic ulcer. Thus, anæmia, begotten of those conditions, is frequently closely related to gastric ulceration. I believe that—certainly in Glasgow—chlorosis, of a severe type, is becoming rather a rare disease, and that as a result the occurrence of gastric ulcer in women is becoming less frequent.

While the connexion between peptic ulcer and these predisposing factors is generally well recognised, there are other elements in the production of ulcer which are less well understood.

Can we claim an accurate knowledge of the pathogenesis of peptic ulcer? If we strive to answer the question, "Why is gastric ulceration found at the outlet of the viscus in the vast majority of cases?" some light may be thrown on the subject. Ulcers inside of the stomach are usually located in the posterior wall of the smaller curvature, while those outside are situated in the first part of the duodenum. Lesions so definitely located to these situations must be related to certain local conditions which determine their site.

No peptic ulcer is ever found outside the range of action of the gastric juice.—We may thus infer that the digestive secretion plays an important rôle in the production of ulcer. We have here, then, one pathogenic factor in the production of peptic ulcer. What other factor or factors come into play in rendering certain situations of the mucosa more vulnerable to the action of the gastric juice? What conditions may arise spontaneously in the stomach permitting the gastric juice to cause erosions of the mucous membrane? It may be said that any condition which devitalises the mucosa, and lowers its resistance, may permit of its auto-digestion by the gastric juice. The so-called *post-mortem* ulceration or digestion of the mucous membrane of the stomach affords a suggestive example of the influence of gastric juice on the mucosa, when, with the cessation of the circulation of the alkaline bloodstream, its resistance to auto-digestion is withdrawn.

In the smaller curvature, where ulcer inside the viscus most commonly occurs, we have abundant *lymphoid tissue* which is susceptible to infection, necrosis, and ulceration. The *septic origin* of gastric ulceration is, in many cases, certain, although no ascertainable portal of infection can be demonstrated. Undoubtedly pyorrhœa alveolaris, and all unhealthy conditions of the mouth, throat, and naso-pharynx, may constitute the essential factors in the pathogenesis of peptic ulcer.

In cases of gastric stasis, with prolonged retention of the contents, the stomach becomes an excellent incubating chamber, and infection may thus take place.

Although the free hydrochloric acid of the gastric juice is a powerful antiseptic, and the first line of defence against infection, it should be remembered that when the stomach is quiescent little or no acid is normally found in the organ.

During this period of functional inactivity infection may take place.

Ulceration may result from bacterial invasion of the lymphatic tissue due to septic gastritis.

Again, in the *region of the outlet of the stomach there is less protection against the digestive action of the gastric juice*. When the stomach is empty, the fundal end contracts into a colon-like tube, causing abundant folding or "*rugæ*" of the mucous membrane. These folds afford ample protection to small erosions or bleeding points. Besides, owing to this redundancy of the mucous membrane, near the fundal end of the stomach, there is a larger amount of mucus, which affords an additional protection against the action of the gastric juice. These conditions are largely absent towards the outlet of the stomach, and the local lack of protection is a factor in the localisation of peptic ulcer. It is asserted by Kaufmann that the mucous membrane, in cases of *amyxorrhœa gastrica* (absence of mucus), is much more sensitive to the influence of the normal, or even subacid, gastric juice.

There is some experimental evidence to show that possibly an anti-ferment exists, which is the natural protection to the mucous membrane against its auto-digestion. Under what conditions this substance is elaborated and regulated we do not know.

It is commonly accepted that, in the majority of cases of peptic ulcer, there is an accompanying *hyperchlorhydria*, not infrequently associated with *hypersecretion*. Does the excessive acidity act as an irritant to the mucosa? Is it the cause of the ulcer or the consequence? It is rather important to examine these points. In the first place, it is impossible to accept hyperchlorhydria as *the* pathogenic agent in the production of ulcer, simply for the reason that it does not always occur. It is true that an increased acidity is commoner than a euchlorhydria or hypochlorhydria in association with peptic ulcer. The most pronounced degree of hyperacidity with hypersecretion is found in duodenal ulceration. Besides, hyperchlorhydria and hypersecretion occur independently of ulceration, although we may regard them, in certain cases, as the preclinical stage of the peptic ulcer. In favour of the theory that hyperacidity is a potent excitant to formation of

ulcer, it may be noted that a peptic erosion at the stoma or in the jejunum after gastro-enterostomy occurs most frequently in those cases where symptoms of hyperacidity persist after operation. On the other hand, it must be recognised that the acid chyme is poured on to a portion of the mucous membrane, which, from want of habituation, may be more vulnerable.

A well-marked and persistent hypersecretion is almost a certain sign of duodenal erosion. An ulcer in the stomach or duodenum acts as a perpetual stimulus to secretion, and deprives the organ of physiological rest. It will thus be seen that hyperacidity appears in some instances to promote the ulcerative process, and in other cases, where an ulcer has formed, it may be the cause of maintaining it.

Disorders of innervation may disturb the secretion both in quality and quantity, while local changes in the circulation may decrease the vitality of the mucous membrane, and permit of its auto-digestion. Wax emboli, experimentally introduced into the circulation, may produce ulceration, and the vaso-motor disturbances following section of the vagus or injury to the coeliac axis may have a like result.

In the *diagnosis* of gastric ulcer certain difficulties may present themselves to the practitioner. I would like to emphasise the frequency with which peptic ulcer may for long remain latent, or be associated with such trivial symptoms that its presence may be unsuspected by the physician. The history of some cases is quite negative, and the condition remains unrecognised because the practitioner expects to find the so-called classical symptoms more consistently present. Thus he is frequently content to exclude gastric ulcer because there is no macroscopic hæmorrhage from the stomach or bowel.

All cases of persistent dyspepsia which are associated with *pain* should be treated as ulceration unless functional derangement can be excluded. The neglect of this rule is the cause of many a fatality. In acute peptic ulcer not infrequently the first indication of the presence of the disease is an alarming hæmorrhage, or the more dramatic symptoms of perforation. As a rule, in these latent cases it will be found that some indications of gastric derangement have antedated the hæmorrhage or perforation, but they have not been urgent enough to compel the patient to stop work or to seek advice.

Pain is by far the most important symptom of gastric ulcer. It is far more commonly present than absent, and when it has certain characteristics its significance can hardly be overlooked.

The *cause of pain* in gastric ulcer is much misunderstood. It is not principally produced by the mechanical irritation of the food particles on the broken surface. This, I find, is the common theory of its causation. No doubt pain which may follow solid and roughly divided food is greater than that which results from the ingestion of bland fluids, and the almost immediate relief which is afforded by the act of vomiting lends colour to this idea. But if the presence of solid food in the stomach, acting on the erosion and mechanically irritating it, was the real cause of the pain, it would not be relieved by alkalis alone as it often immediately is.

What then are the causes and *significance of gastric pain* in peptic ulcer? The mucosæ of the hollow viscera are not very sensitive, but their peritoneal surfaces are. When pain is very persistent and severe it ought to be regarded as ominous of considerable perigastric irritation. In a large number of cases operated on I have observed that pain has often been proportionate to the depth of the ulcer. Persistent severe pain should, therefore, be regarded as of serious import, possibly portending the approach of perforation. I have also observed that severe pain has been a feature of those cases in which the pancreas was involved in the perigastric adhesions. In these cases the pain is often severe in the back.

Pain may also accompany adhesions resulting from perigastritis or periduodenitis. The peristalsis following the ingestion of food drags on these adhesions, and involves disturbance of the sensitive parts.

Most patients suffering from gastric or duodenal ulcer soon learn that a large dose of soda and hot water will often give quick relief. It does not do so by causing the stomach to empty immediately, but by neutralising the acidity, and thus arresting peristalsis and spasm.

The *character of the pain* in gastric ulcer varies greatly in different individuals. It may be sharp or dull, localised or diffuse. It has usually a very definite relationship to the ingestion of food, and its *time of onset* affords some indication of the site of ulceration. Coming on immediately, or shortly

after, in ulcers *inside* the stomach, it is delayed from one to three hours after ingestion in ulcers at the duodenum.

When pain is situated definitely over one point it may also suggest the position of the ulcer. In *gastric ulcer* it is usually in the mid-epigastric region, and frequently has an associated area in the spinal region about the tenth to the eleventh interspaces. In *duodenal ulcer* the pain is most characteristically rather towards the right side, and may be located under the upper belly of the right rectus muscle. There may also be a corresponding painful spot in the back.

Tenderness over the region of the pain can usually be elicited, but I rarely find the frequently-described *hyperæsthesia* to gentle stroking either in the gastric or dorsal regions.

Occasionally, too, the location of an ulcer may be surmised by the relief or aggravation of the pain following an alteration in the decubitus. The pain of ulcers situated posteriorly may be relieved by lying prone on the stomach, while that of those on the anterior wall may be mitigated by assuming the dorsal decubitus. In duodenal ulceration the pain may be aggravated by lying on the right and relieved by lying on the left side.

Even when no marked pain or tenderness is experienced, a valuable indication of the existence of an ulcer is afforded by the presence of *rigidity*. Local rigidity means the necessity for local protection. It is nature's method of indicating an underlying irritative lesion. In appendicitis rigidity is commonly found over M'Burney's spot, and in duodenal and gastric ulcer we usually find that when both of the upper bellies of the recti are palpated one or other may be rigid. Rigidity over the right rectus is indicative of ulcer at the outlet or duodenum, and over the left of ulcer inside the stomach.

Heartburn is a very common symptom of peptic ulcer. It is more pronounced in duodenal than in gastric ulcer, because in the former there is commonly a more pronounced hyperchlorhydria than in the latter.

No more common error is made than in assuming that the symptoms of acidity are always due to an excess of hydrochloric acid. Flatulence, sour eructations, and heartburn are even more pronounced in certain cases where hydrochloric acid is absent than in some where it may be greatly in excess of the normal. In malignant achylia symptoms of pronounced acidity

are frequently complained of. But the acidity is due to the absence of free hydrochloric acid and the consequent formation of organic acids. These are usually kept in abeyance by the presence of a sufficient quantity of the antiseptic hydrochloric acid. To be certain of the causation of heartburn and other symptoms of acidity the gastric chemistry must be studied.

The *appetite* in peptic ulceration is usually well maintained. It may be too keen, and is only restrained by the fear of the pain which over-indulgence engenders.

The *tongue* is usually clean.

The very important symptom and sign of *hæmorrhage* in peptic ulcer is of great diagnostic value. But probably objective hæmorrhage is less common than occult in peptic ulceration. This is more especially true in the duodenal variety. An error as to the source of macroscopic hæmorrhage can readily be made. I have seen cases of hæmatemesis and melæna diagnosed as peptic ulcer when in reality no erosion was present. It is not uncommon to have blood reaching the stomach from the respiratory tract and giving rise to an error of diagnosis. It should therefore be kept in mind that gastro-intestinal hæmorrhage is not confined to ulceration. It may occur in cirrhosis of the liver, from severe passive hyperæmia associated with cardiac disease, from certain blood diseases, and from some constitutional disorders. A consideration of the history and a careful examination of the patient will usually exclude these errors.

When blood is shed in small quantities it may give rise to no gastric irritation, and will, unless vomited, pass into the bowel. When vomited, if in small quantity, the colour of the blood is brown or blackish (coffee grounds). As small hæmorrhages are more characteristic of cancers than of peptic ulceration, "coffee grounds" vomiting is supposed to be more diagnostic of the latter than of the former. The truth is the colour of the vomitus depends on the length of time the blood has lain in the stomach. It is darkened by the action of the digestive juices, and by the gases of the stomach when it remains any time in the viscus. If shed in large quantity its presence is resented by the stomach, and it is vomited too quickly to be much altered in appearance.

In at least about 80 per cent of peptic ulcers bleeding is

present. In ulcers inside the viscus the larger amount may be vomited, while in pyloric and duodenal ulcers the greater part may pass into the bowel and be voided *per rectum*. In most cases of hæmatemesis from gastric ulcer there is also melæna: but, in duodenal ulcer, unless the bleeding be very severe, when it may regurgitate into the stomach, there is only melæna.

Very severe hæmorrhages occur from time to time in peptic ulceration, and perhaps the most violent are those associated with ulcer on the posterior wall of the duodenum when one of the hepatic branches gets eroded. Fortunately, very few cases succumb to bleeding, and even when a patient has been bled to syncope recovery may take place. Not more than 3 per cent of such cases end fatally.

Hæmorrhage, then, must be regarded as a very important sign of peptic ulceration. When seen macroscopically in the vomit or in the stool, it is demonstration of a breach of surface of the mucous membrane; but, far more commonly, *ulcer fails to be diagnosed because no visible blood is seen*. Occult or latent blood should be sought for in the vomitus or in the extracted gastric content, and in the fæces, before either a positive or negative diagnosis be adopted. It is more important to find it in the fæces than in the vomit or gastric content. If violent vomiting has taken place, or if the stomach-tube has excited strong retching, the violence of the straining may produce a leak which contaminates the stomach contents. If other sources of contamination can be excluded, and if found in the stool after four days of a hæmoglobin-free diet, it may be regarded as diagnostic of a broken surface.

Small quantities of blood make no alteration in the colour of the fæces, but a strong positive reaction may be obtained even when the stool is of the palest. A single negative test is no proof of the absence of occult blood, and in cases where the clinical symptoms continue to suggest ulcer, repeated examinations of the prepared stool should be made; a conclusive opinion cannot otherwise be formed.

The elucidation of certain difficult cases can be promoted by the employment of *x-rays and bismuth meals*. When no structural change is present, this method of investigation cannot be so usefully employed. When, however, alteration

in size, shape, or position of the stomach exists, these can be definitely demonstrated by a good skiagram. In chronic gastric and duodenal ulcers which have become the seat of infiltration, and have raised and thickened edges, the size and position of these can sometimes be actually seen, after the bulk of the bismuth has left the stomach, by the shadow cast of what remains deposited in the crater-like cavity of the ulcer.

It will have been seen that the diagnosis of peptic ulcer, in cases unassociated with marked symptoms or signs, is not always easy. Fortunately, supplemental information of a more exact kind can be obtained by a study of the *gastro-intestinal chemistry*. By the administration of *test meals* we are able to estimate the condition of gastric digestion, and to obtain data of great diagnostic importance. For general purposes, it suffices to give a test supper and breakfast; occasionally, for certain purposes, a test dinner may be required.

The English pattern of stomach-tube, employed for removal of the meals, may not give us entirely reliable results. All good tubes used for extracting a test meal should have an open end, and the lateral apertures should be very close to the end. A tube of too small calibre should not be employed; it blocks easily, and is not permeable to solid particles, such as currants or cranberries, which we employ as tests and may seek for in the extracted stomach contents. The tubes of Boas or Ewald fulfil all the essentials for successful extraction.

The use of the stomach-tube is contra-indicated in a number of conditions, and especially during, or soon after, hæmatemesis.

When the tube is introduced we may rely on "expression" for obtaining a return, but this method can never yield as complete information as that which we gain by means of "extraction." I have found Kuttner's extractor the simplest and most efficient of all. No instrument should ever exert too powerful suction, or injury to the mucous membrane may result.

In this investigation the employment of the following routine will suffice for almost all cases:—

1. The *test supper* is given at bedtime. It consists of some simple repast, as bread and water, to which is added about a dessertspoonful of currants or cranberries. The currants should simply be washed, and the patient should be asked to

eat them fairly quickly, so as to ensure that some of them will pass into the stomach whole.

2. The *test breakfast* is given next morning in the form of the Boas or Ewald meal. Either 1 pint of oatmeal gruel, or one slice of white bread toasted to a biscuit colour (crusts removed), and eaten without butter and with 10 to 12 fluid oz. of tea (without sugar, milk, or cream), may be given at a pre-arranged hour. The breakfast is taken off exactly in one hour after its ingestion.

When some experience has been gained, the appearance of the gastric contents will at once give valuable information.

I. *The macroscopic appearances of the extracted meal.*—The following points should be noted:—

1. *The efficiency of the digestive power of the stomach.*—The individual particles of toast should no longer be recognisable, and the meal should have the appearance of crushed biscuit and be perfectly homogeneous. In all forms of *achylia* the material of which the meal is composed is easily recognised. The broken-up toast looks only macerated, and shows no signs of digestion.

2. *The quantity returned.*—It is of considerable importance to have the whole of the contents removed from the stomach, because we may gather from the amount returned the efficiency of gastric motility and the capacity of the stomach to empty itself. Normally, we should only be able to extract from 30 to 80 c.c. If the higher figure be exceeded, we may be sure that there is some atony, obstruction, or hypersecretion. The smallest returns are obtained in simple *achylia*.

3. *Can remnants of the supper or of previous meals be seen?*—If any cranberries or currants taken the previous evening are returned with the breakfast, we have proof of pyloric difficulty. The greater the amount of stenosis the larger will be the number of currants or cranberries. Sometimes we may find in the test meal particles of food which had been taken several days previously. Such remnants indicate an almost complete gastric stasis.

4. *Smell of contents.*—The smell of the test breakfast, in normal conditions, is not unpleasant. It is quite sweet, and is described as “peptic.” The odour may enable us to recognise *fermentation* in the stomach contents. When fermentation is

active, the gastric content will also be unduly *frothy*. In one form, not very common, the smell of sulphuretted hydrogen may be quite strong; it is met with in certain cases of simple stenosis. More frequently, the odour is that which characterises *carbohydrate fermentation*, and is "barmy" or "beery." This type of fermentation occurs also in benign stenosis and motor insufficiency, and is associated with an acid reaction and the presence of *sarcinæ*. In malignant ulceration the gastric content is offensive, and often putrid in smell.

5. *Colour of the content.*—Normally, the returned test breakfast is of a biscuit colour; it may be brown or blackish from contamination with *altered blood*. If *bile* be present, it will be typically greenish in colour. Large quantities of bile persistently found in the gastric content may suggest obstruction in the bowel below the entrance of the bile-duct.

6. *What amount of mucus is present?*—In the extracted meal, or in the vomitus, mucus is usually present in inverse ratio to the acidity. Thus, in duodenal and gastric ulceration, associated with a high acidity, there is hardly any mucus in the extracted meal; in *achylia gastrica nervosa* there may, however, be no mucus present. A large quantity is found in many forms of gastritis (*catarrh*), and is diagnostic. Mucus is present, also in excess, in malignant disease. Excessive mucus may be demonstrated by passing a glass rod through the returned meal. Normally, it comes out only wet; but, if mucus be present in any quantity, it brings with it a large stringy, gelatinous mass of the test meal.

(*To be continued.*)

CHOREA.

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Eastern District Hospital, Glasgow.*(Concluded from p. 356.)*

GENERAL SUMMARY OF CASES.

The preceding thirteen cases whose histories have been shortly summarised give a general indication of the various diseases in which chorea, as a special clinical entity, constitutes, for a time at least, the outstanding feature. It is quite true that perhaps the proportion in which these various diseases appear in the preceding review does not give a true indication of their relative frequency in actual practice. That is to say, it is probable that the number of cases of chorea occurring under the age of 15, and corresponding to the type which is described as "average types of chorea seen in general hospital," is much larger than the preceding summary would indicate. As a matter of fact, in the series of 64 cases which are under review, 35 were under 16 years of age and only 6 were over 50 years of age; and even an interpretation of this proportion must bear in view the fact that some of the cases which came under my notice were not representative of the average types of cases in general medical practice, in as much as they were the subjects of long-standing chorea and had already been, for a considerable time, under institution supervision. Another source of error to be guarded against in estimating the relative frequency of these different types is this, that while in the younger cases the choreic phenomena are likely to be transient and to leave no trace of their existence, in many of the older cases the disease is permanent. In this way the relative proportion of cases in childhood is even greater than would appear from a merely numerical statement of the numbers coming under the notice of one observer.

It may be objected that some of the conditions described are not cases of true chorea at all. This attitude might well be adopted by those who regard chorea as the evidence of infection; but, as a matter of fact, the only evidence of the presence of chorea in any individual case is the inco-ordinate, jerky, and purposeless movements which give it its characteristic appearance. Admittedly there are great variations in the character of these movements. In some cases they are slow and athetoid in character, and there are all degrees from this to those conditions in which the movements are quick and jerky, and, in fact, indistinguishable from tics. It not infrequently happens (Case XLVIII) that the remnants of the choreic movements in a convalescent case assume the form of tics. But this variation in the character of the movements does not in any way correspond with the variety of different diseases with which chorea is associated. It may be true, on the whole, that the sharp, jerky movements are more characteristic of younger patients, while the athetoid form of chorea is more characteristic of senile organic brain disease; but even in the same patient there may, during the course of the disease, be a very distinct alteration in the character of the choreic movements. This was seen in Case XLVII, where during convalescence the choreic movements remained only on the right side of the body and were very slight and athetoid in character, while at the height of the disturbance they were sharp, jerky, and even convulsive, and general in their distribution.

CHOREA AND PARALYSIS.

A very common feature in chorea is a state of paresis in groups of muscles. This paresis may precede the onset of the movements, and in most cases, if not in all, there would appear to be a condition of paresis when the disease is active. In fact, it is not improbable that the choreic movements may be explained on the assumption that there is a depressed state of some muscles and an enhanced excitability of others. One gets the impression from watching the movements of some cases, as if the inco-ordinate and involuntary movements were due to an inability on the part of certain groups of muscles to act in co-ordination with the groups of opposite function. That

is to say, the jerky movements in the arm, for example, might be explained by a failure on part of the extensor muscles to fix the limb properly, while the flexor muscles were active. This, of course, is putting the matter in very broad terms. There is no doubt, however, that those limbs in which the disturbance is most marked take a longer time to recover, and sometimes show very definite signs of weakness over a prolonged period. There are cases in which, even after the choreic movements have disappeared, certain groups of muscles are definitely paretic. Complete paralysis, however, must be very rare, and there is no evidence of loss of nutrition or of sensory disturbance or of change in the response to the induced or continuous current.

It is probably the case that chorea in most instances begins in one limb on one side of the body, and remains, for a period at least, confined to one side. If, however, the disease becomes violent, it does not remain confined to one part of the body; but in this, as in other diseases, there are all variations, from the slightest manifestation of functional disorder, which in this case may be nothing more than abnormal habit movement or a grimace, to violent convulsions of a maniacal character, in which, in fact, it might be difficult to trace the signs of an ordinary chorea as it generally presents itself.

RHEUMATISM AND CHOREA.

The part played by rheumatism in the symptomatology of the cases under review was a very insignificant one, if the term "rheumatism" be restricted to the condition of acute febrile arthritis. Only in 3 cases out of 64 did the chorea develop in immediate association with acute articular rheumatism. In one case (Case XIII) the chorea developed a few weeks after the rheumatic fever, and in the other two cases the two conditions were present simultaneously. In 18 cases out of the 64 there was a history of "rheumatism," but it is difficult to estimate the value which should be put on such a history. At any rate, so far as these cases are concerned, the part played by acute articular rheumatism is not a prominent one. It is possible, however, to miss the correct conclusion on this aspect of the subject by taking too restricted a view of the nature of

rheumatism itself, for there are, no doubt, cases of chorea in which rheumatism is present in the form of cardiac disease or rheumatic nodules, and in which the articular form of rheumatism has never been present. At any rate, those cases of cardiac disease which develop in childhood and in adolescence, and progress to a stenosis of the valvular orifices, not infrequently show no sign of articular disease, and yet show other evidence of rheumatism in the form of nodules; and there is every reason to believe that when a case of chorea is complicated by cardiac disease, that disease is also rheumatic in origin. One must, however, avoid the error of assuming that rheumatic fever is a disease which is comparable with the ordinary acute infections, such as pneumonia and enteric. This is not the place in which to enter into a discussion on the merits of the respective theories which have been advanced to explain the origin and protean manifestations of rheumatism. It is sufficient to say that no conclusive evidence has so far been adduced in support of the microbic theory. I have examined ten cases of acute rheumatism bacteriologically, examining both the blood and the serous exudates, and I have not succeeded in isolating an organism. In two cases of recurrent rheumatism with advanced heart disease I have isolated a diplo-streptococcus, which produced arthritis and endocarditis in rabbits, but both cases were low forms of malignant endocarditis, superimposed on rheumatic endocarditis, and in each case the diagnosis was confirmed by *post-mortem* examination. If rheumatism is due to an organism, then that organism differs from the other organisms which produce acute febrile diseases, in that the subject of infection does not suffer from a disease which runs a definite course, whose prognosis and complications can be explained in relation to the original infection. For example, in enteric fever the disease runs a definite febrile course, subject, naturally, to great variations—both in the character of the fever chart and in its duration—but the disease is almost always associated with a bowel lesion, and is almost always associated with some form of alimentary symptoms. The complications which occur, such as hæmorrhage, peritonitis, and bronchitis, can be brought into relationship with a perfectly clear conception of the pathological origin and course of the disease. With rheumatism, on the other hand, there is no

recognised starting point in the conception of its pathology. It is certainly not primarily a joint disease, and many of its manifestations occur without fever. Some of its most definite signs, such as the erythemata, leave no recognisable anatomical lesion of a specific character.

Another point of contrast between the ordinary bacterial infection and acute rheumatism is that the latter in its several manifestations is amenable in so many instances to treatment with an ordinary drug like salicylate of soda. There is no instance of an infection outside the protozoal infections yielding to a drug of this kind. If chorea is to be regarded as bearing any relation to rheumatism, then that relationship is not a causal one. It is highly probable that the rheumatic state is capable of manifesting itself, whatever its cause may be, in a great variety of ways. In this respect it resembles more the character of a syphilitic or tubercular infection. Its manifestations may run concurrently in a few cases, but in the majority of cases they may be mutually exclusive. The problem of the relationship of rheumatism to chorea does not resolve itself into a question as to whether any such relationship exists, but rather as to what the relationship actually is. In the cases which we have reviewed a direct relationship of a causal nature between the articular form of rheumatism and chorea certainly did not appear to exist, but this point will be referred to in discussing the pathology of the disease.

CARDIAC DISEASE AND CHOREA.

Cardiac disease has not been a prominent feature in these cases. In 8 cases out of the 64 there was definite evidence of valvular disease in an advanced stage. In other 10 cases there was a mitral systolic murmur which might have indicated the presence of valvular disease, although it is quite possible, and indeed probable, that in some of these the murmur was functional in origin. In 4 cases a mitral systolic murmur was present during the attacks, but was absent when the patients were examined subsequently. In 3 cases the patients, during their first residence in hospital, showed no evidence of cardiac disease, but on admission for a second time there was evidence of cardiac disease. The irregularity of the pulse which occurs

in some cases does not appear to have any relation to organic disease of the heart. In some cases it is nervous in origin, and in others it is related to the respiratory irregularity incident to choreic involvement of the thoracic muscles. The peculiarly complex nature of the relationship which exists between chorea and cardiac disease is evidenced in Case XXX. This woman, who was 62 years of age, developed a typical attack of chorea. She had never had rheumatism, and her heart was normal. Two of her daughters had had chorea in adolescence, but had never had rheumatism, either in the articular or in any other form, as far as could be made out; but one of them was the subject of a well-marked mitral stenosis, such as in the light of our present knowledge of cardiac disease would be naturally attributed to rheumatism. There is here not only the evidence of a deep-seated relationship between cardiac disease and chorea, but also the indication that it is the hereditary element, or neuropathic diathesis, which is the most general characteristic of chorea, indicating, as it does, the constitutional proclivity of the tissues of certain families to present the evidence of a certain group of lesions, some elements of the group appearing in some members of the family and some in others, and even in the case of a single individual different elements appearing at different ages. Garrod, in his well-known monograph on rheumatism, refers to the occurrence of chorea as a rheumatic manifestation in the following terms:—

“Among the remaining manifestations of rheumatism which are specially common in children chorea holds a prominent place, and is often associated with endocarditis in cases in which the joints escape entirely. Without entering here upon the difficult question of the relation of chorea to rheumatism, the discussion of which is reserved for a later chapter, I may express my belief that the endocarditis which in so many instances attends chorea affords evidence that in such cases the nervous symptoms are of rheumatic origin. I have more than once witnessed the development of subcutaneous nodules in association with chorea and endocarditis in cases in which there was no evidence of past or present articular troubles, and I believe that such cases afford very valuable evidence of the correctness of the above view.

“Chorea, like endocarditis, may be the earliest manifestation

of the rheumatic state, but more commonly it appears as a later event in the series, either in direct association with, or as an immediate sequel of, more definite rheumatic attacks, or in patients who have suffered from articular rheumatism at some earlier period. Many rheumatic children exhibit a slight inco-ordination of movement, evidenced by twitching of the facial muscles or by some awkwardness of the hands and arms, which is hardly worthy of the name of chorea, and which may escape notice unless carefully looked for; and between such trifling symptoms and the most pronounced form of St. Vitus' dance every grade is met with."

NERVOUS DISEASE AND CHOREA.

There is no doubt at all that, apart from the choreiform movements themselves, symptoms of disease which are most frequently and most prominently present in chorea are those which are referable to a disturbance of the nervous system. Not only is it the case, as is shown from the preceding review, that chorea may complicate a variety of nervous diseases, but it is also a very striking feature of the disease itself that nervous symptoms of a functional character are a more or less prominent feature of every case. An increase of the vasomotor reaction in the vascular supply of the skin is very often present. A complaint is often made, more especially by adult patients, of a dull feeling in the skin preceding the onset of motor symptoms. Severe pains and tenderness over the nerve trunks are met with, while in some cases the skin may be relatively insensitive, and cases have been noted in which areas of anæsthesia were present. The pupils are often dilated, and very frequently there is an increase in the tendon reflexes.

It is, however, in the region of psychic phenomena that the nervous disturbance of chorea most frequently manifests itself. There is no mental peculiarity characteristic of chorea. Emotional states of the most varied character are met with, and the colouring which those emotional states lend to the mental picture varies, naturally, with the age, education, and intelligence of the patient. At the age when chorea most frequently develops, the mental characteristics of the individual are not

yet sufficiently delineated to admit of a description in the terms that are recognised in technical psychology. In fact, the mental abnormalities of children under any circumstances constitute, so far, an unexplored field. It is, however, the case that the psychic disturbances of chorea in children may be placed under two groups—those in which there is emotional depression accompanied by blunting of the intelligence, and those in which there is emotional excitement accompanied by sharpening of the intelligence. Among the former are found cases where the patients are frightened and anxious. There is usually an incapacity for concentrating attention, and loss of memory and indolence are occasional features. In some cases the depression of thought is so marked as to indicate a state of feeble-mindedness. Among the other class, in which there is emotional excitement, the patients may be very quick and sharp, both in speech and in occupation. One is not infrequently told that they have been exceptionally clever in school. These are the cases in which the emotional excitement tends to develop into a maniacal state, or into a delirium, and in such states there may be all the features of an ordinary maniacal delirium, with hallucinations, delusions, and confusion.

It is, however, not so much from the nervous symptoms which accompany the individual attack of chorea as from the pathologically nervous basis on which the choreic phenomena develop that the relationship of the disease to functional disorder of the nervous system can be best interpreted. This point is well shown in the various cases whose histories have just been shortly detailed. Even among the “average types of chorea seen in general hospital” (Class A) there is not infrequently, both in the family history and in the history of the patients, suggestion of nervous instability. In some instances it may be that the patients or their relations are said to be nervous or highly strung. In others, there is a history of insanity. But when it is found that chorea is associated with epilepsy, and that the epilepsy may alternate with the chorea, and that chorea may be present in other members of the family without epilepsy but with cardiac disease, then the evidence of a neuropathic element in the etiology of chorea is practically conclusive (Class C).

Other nervous disorders on which chorea develops as a

transient complication, and whose association with chorea bears testimony to the nervous origin of the disease, find an example in the case of hemiplegia which has been described (Class D). It is interesting to note that while such hemiplegias may be complicated by epilepsy in some instances, in others they are complicated by chorea. It is also important to note that when the epileptic convulsions occur, they not infrequently begin in the paretic limbs, and, similarly, when chorea develops, the movements begin on the side that is paralysed, and in convalescence disappear last from that side. But hemiplegia is not the only organic brain disease in which the symptoms of chorea may manifest themselves. Occasionally these symptoms are noted in general paralysis of the insane, and in the pre-senile conditions of excitement associated with arterial brain degeneration. It does not, however, follow that such organic brain disease constitutes an anatomical basis explanatory of the choreic phenomena. On the contrary, as will be pointed out later on, the chorea is but a functional disorder of the nervous system which has been rendered unstable by the organic brain disease. That is to say, there is no evidence that any particular lesion of the brain would give rise to chorea in a series of cases. It is rather the case that a similar lesion in three cases might give rise to epilepsy in the one, chorea in the second, and to emotional depression in the third, the occurrence of any one of these three complications being determined by an inherent proclivity on the part of the unstable brain to manifest its functional weakness by a particular kind of disorder.

The cases in which chorea is associated with the neuroses (Class E) are particularly interesting in so far that they afford evidence of the close alliance between choreiform movements and recognised types of hysterical nervous instability. Two cases are cited (Class F), in which chorea of long standing was associated with dementia, and in which that dementia was not of the senile type. It is of further interest that the disease in these cases affected father and daughter, the father's affliction having been attributed to a shock consequent on extensive burns. These cases did not present, in their clinical manifestations, any point in which they could be distinguished from the ordinary chorea which begins in childhood. They might, possibly, in view of the hereditary element and of the

accompanying dementia, be classified as cases of Huntingdon's chorea, but the hereditary element plays such a very considerable part in the great majority of cases of chorea, at least in the form of neuropathic disposition, that there is no reasonable ground for allotting to heredity a special significance in a differential diagnosis as between one case of chorea and another. The same thing applies to mental deterioration. The occurrence of mental deterioration in chorea is capable of explanation in different cases in different ways. In the first place, chorea occurs in patients who are already mentally unstable by temperament; that is to say, in patients in whose case the only mental defect consists in emotional instability. In the second place, it occurs in cases where there is a definite defect in mental development, or where the mental powers have been reduced by organic brain disease; and in the third place, when the chorea lasts over a considerable period, say years, it is accompanied undoubtedly by progressive dementia. There are thus no reasons, of a clinical nature at least, why one case of chorea should be differentiated from another in virtue of hereditary predisposition or mental deterioration.

THE PATHOLOGY OF CHOREA.

During the past century several hypotheses have been advanced to explain the pathology of chorea. Bright recognised a relationship between chorea and acute rheumatism, although the explanation which he advanced could be said to cover only a very small proportion of cases. He believed, for example, that pericarditis was a common cause of chorea, and that the convulsive movements were a result of irritation conveyed from the inflamed pericardium to the spinal centres. About the same time Copland communicated his view on the connection between chorea and rheumatism. He described a case in which rheumatism alternated with chorea, and he regarded this as evidence of a possible metastasis from the joints to the membranes of the spinal cord. The teaching, however, of Bright and Copland was modified to a considerable extent by the views which were advanced some time later by Kirke, whose speculations on the subject have exercised a very profound influence on the textbook teaching of chorea, although they have contributed nothing

to an elucidation of the problem of its pathology. In his essay on the subject, Kirke gives a short epitome of what has since been regarded as the embolic theory of chorea. "I would suggest," he says, "that many functional disorders of the nervous system, especially chorea, may be thus explained (that is, by cerebral embolus). The frequent existence of a cardiac murmur in chorea, and the presence of warty vegetations on the valves of the heart, so commonly found in fatal cases of the disease, are in favour of such a view." It is scarcely necessary to point out that the embolic theory of chorea has no established basis in observed fact. Advanced at a time when the pathology of disease of every kind was being placed on an anatomical basis, this speculation insinuated itself into the traditional teaching on the subject, and there it remains, always quoted, although it is difficult to imagine that there is anyone who still believes in it. It would be labouring the position too much to point out in detail how inconsistent this theory is with the knowledge now possessed of the actual anatomical lesions and their clinical significance in cases of widespread embolic invasion of the nervous system, such, for example, as are found in cases of pyæmia and ulcerative endocarditis, or fat embolisms in cases of traumatic shock with fractured bones.

Theories closely related to that of Kirke have been put forward by Bastian, who suggests that minute thrombosis in certain parts of the brain may give rise to chorea, and he describes such cases where, as a result of this pathological change, there was hyperæmia of the ganglia at the base of the brain, and especially in the corpora striata. Hughlings Jackson has also attributed chorea to a disturbed nutrition in the corpora striata and adjoining basal structures; while Dickinson, from the examination of a series of cases *post-mortem*, has described changes in both the brain and cord. These changes were general in their distribution, and were vascular in character. Congestion of the vessels, peri-arterial degeneration, and sclerosis were seen in practically every part of the central nervous system.

In the cases observed by Rokitanski there was said to be an interstitial overgrowth of connective tissue in the central nervous system, and some continental observers have described spots of softening and areas of hyperæmia in different parts of the

brain and cord. The cerebral changes are described as affecting the brain cortex and gray substance of the basal ganglia, with involutionary changes in the neuronie elements, both in the brain and cord, and even in the peripheral nervous system. Changes have also been noticed in cases of hemi-chorea with hemiplegia, in which the posterior end of the optic thalamus was involved, and in other cases changes in the anterior corpus quadrigeminum have been described. These historical references exhaust the contribution which has been made by pathological anatomy to the elucidation of the problem of chorea, and it is not too much to say that the contribution is not only not great, but has been even misleading.

No consideration of the pathology of a problem of this kind would be considered complete which did not include a reference to the possibility of an infectious basis. In fact, in some quarters there is a disposition to regard chorea as being specifically infectious in origin, and to place outside the category of true chorea all cases which cannot be attributed to this supposed cause. There is, however, not the slightest evidence that chorea, as such, is the result of an infection. If it occurs more frequently in association with rheumatism than with any other febrile disturbances, that does not necessarily mean that rheumatism is more than a predisposing cause. It is well, however, once more to emphasise the point which has been repeatedly referred to in the preceding pages, that the part played by rheumatism in this and in other conditions will never be fully realised until we know more exactly what rheumatism really is. There is no doubt at all that rheumatism may manifest itself in a very acute form, quite apart from articular involvement, and that, too, in a form manifesting characteristic histological changes, as I have recently seen in a case of acute myocarditis. Until some serum or chemical test, similar to the Widal or Wassermann reactions, has been elaborated for rheumatism, one must regard with suspicion the direct relationship between rheumatism and many of those conditions which are looked upon as its metamorphic manifestations.

No more satisfactory than the anatomical or infectious theories is that in virtue of which chorea is attributed to a changed condition of the blood. In view of the presence on

the cardiac valves of small fibrinous deposits in fatal cases, and the occurrence of chronic valvular disease in other cases, Ogle has attributed these to "the presence of some antecedent condition of the blood." In rheumatism and in anæmia, conditions, both of them, associated with chorea, an excess of fibrin renders it prone to be precipitated, and he suggests that this condition may be the explanation of the association of chorea with rheumatism.

It is obvious that these conjectures, anatomical, bacteriological, and chemical, afford very little assistance in the interpretation of chorea. At the best, they are but unverified paraphrases of statements that have been made on clinical evidence, and it is a suggestive commentary on the attitude of mind which looks for explanations in these factors that the hypotheses which leave the anatomical, bacteriological, and chemical side of the question altogether out of account are those which afford the most suggestive explanation of chorea, as it occurs with its varied associations and concomitant disturbances. As long ago as 1854, when the embolic theory had been two years in existence, Todd published his lectures on chorea, in which he said:—

"It is easier to say what chorea is not, than to describe what its essential nature is. One may regard it as a disease which depends on a debilitated state of the system, which does not in any way arise from an inflammatory or hyperæmic state of the nervous system or of the other organs. Almost without exception, in those cases which terminate fatally, we fail to find any morbid change which physiologically could give rise to the phenomena. If we are to refer to any particular part, it would be to that which may be regarded as the centre of emotion. The remarkable frequency with which an attack has been traceable to fright as its cause points clearly to this part of the brain as the *prima movens* in the production of choreic convulsions. The chain of phenomena would then be as follows:—1st, a peculiar diathesis; 2nd, a more or less enfeebled nutrition; 3rd, a strong mental impression which disturbs the centre of emotion, and deranges the action more or less of the nervous system, and of a corresponding portion of the muscular system."

Equally comprehensive and suggestive is the view put

forward by Hanfield Jones. Summarising his interpretation of the pathology of the disease, he says:—

“The motor centres especially, and not infrequently the intellectual, emotional, and sensory, in persons of weak organisation, fall into a state of paresis, often in consequence of a shock, or more gradual injury, or of some toxic matter in the blood, or of peripheral irritation, all of which may generate the same peculiar condition. The paresis in all these parts may take the form of hyperexcitability or of paralysis, the former being much the more frequent. The nervous exhaustion, aggravated more or less by the jactitation, involves the vasomotor nerves of the cerebral and spinal arteries especially, and conditionates relaxation of their muscular walls, as well as impairment of the tone of the capillaries and hæmorrhage. These, however, are of course not necessary events, even in fatal cases. Occasionally, actual inflammation of the nerve centres results from the hyperæmia. Pulmonary congestion and consolidation may be produced in the same way, and possibly, in some instances, valvular lesions of the heart. This view, that chorea is essentially a functional disorder of the motor centres is in harmony with its frequency in children and females, whose motor apparatus is more prone to be weak and irritable with its affinities to hysteria, paralysis, and insanity.”

CHOREA AS A FUNCTIONAL DISEASE.

It is clear from a consideration of the historical aspect of the pathology of chorea, that those hypotheses which were founded on an anatomical basis have contributed but little to an explanation of the symptoms of chorea, or of their relations to the associated diseases. A hypothesis, to be satisfactory, must cover the whole range of conditions within the limits of which the disease occurs. It is not sufficient to say that rheumatism is a cause in a certain proportion, heart disease in another proportion, pregnancy in another proportion, and organic brain disease in still another. If the phenomena are invariably the same, independently of the other pathological processes with which they are associated, there must be some common factor to account for the condition in all the cases. The point of view

which supplies a conception of this common factor is that which regards chorea as a functional disorder of an unstable brain, such instability being due in some cases to constitutional causes, in others to toxic exhaustion, and in still others to organic brain disease. In his contribution to the study of chorea in pregnancy, Barnes suggests this point:—

“The condition upon which the latent disposition to chorea depends is some change of nutrition or of structure of the nervous centres, unimportant under the ordinary conditions of life but liable to be called out into renewed activity under that special increase of central nervous development which is the constant attendant upon pregnancy.”

The fact of fundamental importance in connection with the etiology of chorea is that it supervenes in cases in which there is a condition of nervous instability. Stability of the central nervous system depends on a proportionate development in youth of both the emotional and intellectual sides of the mind. At the age when chorea is most frequent in children, the nervous basis of the locomotor apparatus has not yet attained its full development, and the emotional life in childhood finds its fullest expression in bodily movements. In early adolescence there is a great accession to the emotional life of new ideas and new experiences, and nervous instability at this period is more likely to find expression in ideational abnormality rather than in motor disturbances. A condition comparable with the instability of the developing brain is found in some cases where the brain is rendered unstable through the involutionary processes of disease, as in general paralysis and chronic brain disease of arterial origin. In these cases chorea, though not frequent, is not unknown. In the same way, a condition of nervous instability is a not uncommon feature of apoplexy or hæmorrhage of other than apoplectic origin, and in these cases also chorea is known to occur. It may be taken, then, as proved from clinical experience that chorea may and does occur in those cases in which nervous instability manifests itself in emotional abnormality. The timid, nervous, apprehensive child gets a fright, and chorea supervenes. The young child with the apoplexy develops, in the one case, epilepsy, and in the other, chorea. The general paralytic in one case has epileptiform seizures, and in the other case chorea. The senile dement has

also in the one case slight epileptiform seizures, and in the other case a transient mild chorea.

The point of view from which the discussion of chorea has been undertaken here does not admit of more than a passing mention of the fact that fright or mental shock is a contributing or exciting factor in many cases. In this respect fright plays the part which it is known to do in many other functional disorders of the nervous system.

How is it, then, that in the presence of so many facts regarding the etiology and course of chorea, there should be so much obscurity and chaos regarding its pathology? It would appear that the main difficulty in the question of the pathology of the disease has arisen in a failure to state the problem in such a manner that a satisfactory solution can be given. The problem of the pathology of chorea has been stated almost invariably as if it were possible to find in the nervous system some localised lesion which would account for the motor agitation. It is, no doubt, the case that an anatomical basis has been found for a considerable number of nervous lesions, but to approach the question of chorea from this standpoint seems to me tantamount to setting out in quest of something which does not exist. Our accumulated knowledge of the disease in respect to its incidence, course, and associated pathological states proves conclusively that chorea is but an incident which may manifest itself under a variety of conditions, and that the only common factor to all cases in which it occurs is an instability of the nervous system. Such instability of the nervous system it is not yet possible to describe, either in anatomical or chemical terms. It is known only by the manner in which the organism reacts in its vital capacity to its surroundings. It is due to qualities that are inherent in the protoplasm and structure of the organism in many cases, and are transmitted from generation to generation. In other cases, nervous instability, indistinguishable as a vital phenomenon from inherent instability, may supervene as a result of organic brain disease, or as a result of some form of intoxication without organic brain disease.

As an example of nervous instability due to organic brain disease apoplexy or general paralysis has been cited, and the most common forms of instability due to toxæmia are probably

those conditions of nervous depression or excitement which supervene on influenza, rheumatism, or tuberculosis. All these conditions of nervous instability, no matter how they arise, may constitute the basis on which choreiform movements may manifest themselves. Why the particular functional disturbance should be chorea, and not some other form of nervous disorder, it is impossible to say, but that chorea is only one form of several functional disorders which may supervene in these states of instability everyone who has occasion to observe a large number of nervous diseases must recognise. More common than chorea in such states, and comparable with it in many respects as a functional disorder, is that condition known as the manic-depressive syndrome. This condition means simply an exaggeration of that alternating exaltation and depression of mental, emotional, and physical tone to which every individual with a sensitive nervous system is subject. It may appear in all grades of severity, from the state in which the depression is mild and transient to a state in which it is so severe as to determine an almost complete suspension of physical and mental activity; and the conditions of excitement may also vary from a mild exaltation to acute mania. The manic-depressive syndrome is comparable also with chorea in respect of the fact that it may supervene at any period of life. In the adolescent period it occurs on the basis of constitutional nervous instability. It may precede the onset of general paralysis, or of organic brain disease due to arterial degeneration. It may occur in conditions of apoplexy, and it not infrequently follows the exhaustions due to febrile infections and intoxications. There is thus in the manic-depressive syndrome an almost complete analogy with chorea. The contrast between the two conditions is to be found in the character of the functional disturbance itself. In chorea it is motor, and when it occurs in youth it occurs at a period when the emotional nature find its expression for the most part in motor excitement. In the manic-depressive syndrome in young people, on the other hand, emotional excitement more frequently finds its expression in ideation, and such excitement, coming on in the period of adolescence, has reference in expression to those ideas and facts of the new world of experience which is being opened up at this age.

What it is that determines whether in later life one form of

functional disorder or another should supervene is a matter outside the realm of our present knowledge. It is simply a question of the individual peculiarity of the nervous system whether, for example, a hemiplegic is epileptic or the subject of chorea. If rheumatism or the rheumatic poison be the cause of the nervous instability which finds expression in chorea, there is no known means of determining why it is chorea, and not simply a paralysis or a hysterical convulsion that has occurred as the nervous complication. We are thus forced to the conclusion that if the problems of the pathology of chorea are to be solved, they must first be stated in a manner which will render a solution compatible with an explanation of the occurrence of chorea as an incident in many different diseases, and also with a recognition of the fact that the general nervous substratum is no less important a factor in the ætiology than frights, infections, or organic lesions.

THE TREATMENT OF CHOREA.

Like so many other diseases, the treatment of chorea has developed along empirical lines, associated often in an accidental manner with some current theory as to the origin of the disease. There can be no doubt, for example, that sodium salicylate or aspirin, the most useful drugs in rheumatism, prove efficacious in some cases of chorea. The rheumatic origin of chorea was undoubtedly responsible for the use of these drugs; but there are cases of chorea in which there is not the slightest evidence of rheumatism where aspirin has a very beneficial effect. Antipyrin, in large doses, is also found to have good results in some cases; and, so far as drug treatment is concerned, in the cases which have come under my observation, there can be no question at all that the best results have been obtained with aspirin and antipyrin. In some cases arsenic was administered in the form of Fowler's solution, but the results cannot be regarded as convincingly favourable. In some cases treated with salvarsan there was undoubtedly a good effect, and salvarsan has been found to have a very stimulating effect on the nervous system in many forms of functional nervous disorder. In the more violent cases hyoscine had to be used to produce rest, and in some adult cases, where

there was severe mental excitement, paraldehyde in two drachm doses was given in order to produce sleep.

The administration of drugs, however, covers only a very small part of the treatment. Physical and mental rest is necessary; baths at 99° to 100° F. for a quarter of an hour should be given twice daily. Patients should have light diet and plenty of milk to drink, and the bowels should be kept well regulated with calomel and mild salines.

In those cases which have recovered from an attack of chorea the surroundings should be so ordered as to render it unlikely that a recurrence should take place. After an attack of chorea, for example, a child should be kept at home from school for months, and in the case of adolescence a period of prolonged rest should follow the disappearance of the motor symptoms.

The treatment of chorea, then, should be prophylactic, taking a serious view of the earliest signs of motor agitation, and putting the patient at once in a position of mental and physical rest, and applying such measures of medicine and hydrotherapy as are likely to produce a speedy recovery. Aspirin or antipyrin, or both, should be given as medicine, and, in addition to these drugs, salvarsan might with advantage be administered.

THE SCOTTISH WOMEN'S HOSPITAL IN SERBIA.

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JUST as it is difficult—almost impossible—for us at home to realise the awfulness of the war, so is it for people who have not been in Serbia to realise how dreadful the conditions there are. To us, living in a country where sanitary arrangements are of the best, where an abundant supply of drinking and washing water is always available, and where we have a good medical system and fine hospitals, it seems impossible that any country could be lacking in all these respects at such a late date as this. Yet it is so; and we saw many of the evils resulting from the lack of such conditions whenever we arrived at Kragujevatz.

In the streets there were naturally many men suffering from wounds received on the battlefield. That is always a sad sight; but we saw worse. We saw many whose wounds had not been rightly tended, and who would carry their marks for life. Most terrible of all were the numbers of men going about who had been wasted by disease; they were worn to mere skin and bone, and had such a wearied, and often death-like, expression on their faces that it was appalling to see them. Such men at home would never have been allowed out of hospital. May be these were waiting for a chance to get in; but more likely, being able at least to walk, they had been dismissed to make room for hundreds more.

So much for the mere outward glimpse. When we saw the inside of a fever hospital, then we understood matters a little more. The first thing that struck us was the lack of air; we were nearly stifled. Not a window was open, and the rooms were heated by big stoves. It was like entering a hothouse, only the atmosphere was thick with the odour of food and of sickness. Owing to the large numbers of the sick, space was very limited. Every room was filled to overflowing. No

certain amount of cubic space was allotted to each bed or mattress; but they were shoved close to each other, so that three men could sleep on two beds. The very corridors were packed with sick men huddled together, and there seemed to be no distinction made as regards degrees of illness; the dangerously ill lay side by side with the almost convalescent. "Typhus" was the one name the Serbians had for all fevers; but there were in reality three kinds of fever to be found, namely, typhus or black fever, recurrent fever, and typhoid. These two first were very rife, more men being lost through them than by fighting. As the cause of these two fevers has been attributed to body lice, it is easy to understand how the disease spread to such an extent. Two of the things essential for stamping it out—space and cleanliness—were entirely lacking in the Serbian hospitals. Though every available place in the hospital was occupied, even then there was not room for the numerous cases, so cafés all over the town were used for them—in fact, every vacant place was utilised. Cleanliness was unknown; the sheets were filthy, the mattresses were verminous. When a man died his body was removed, and a new patient occupied the bed without its being washed or the straw burnt. Further, there was no sanitation. Every hospital had a big cesspool just outside. This was not attended to as it ought to have been, and not even the simplest precautions seemed to be taken to prevent disease spreading. There were no Serbian nurses, so all these poor, helpless, fever-stricken men were entirely at the mercy of Austrian prisoners, who were themselves often as ill and miserable as the patients on whom they waited. They were supposed to do everything for them—give them their food, make their beds, keep them clean. It is not difficult to imagine how much care they would get. The result was the men lay for weeks without proper attention.

From such hospitals we got our patients. Often they used to die in the stretchers while they were being carried to our hospital. Some had bedsores so deep that the very bone was exposed. Others were a mass of sores from head to foot. Most of them seemed half crazed, and it was about ten days before they even got rid of the feeling of fear which possessed them. It was pitiful to see sights like these resulting from sheer

neglect. Ours was a surgical hospital. We were given a girls' school, which was already being used as a hospital by the Serbians. We had to start at the foundation, and thoroughly clean every part of it with all sorts of carbolic solutions. It consisted of two blocks separated by a court-yard, in the middle of which was the usual cesspool. This had to be passed daily by the wounded as they were carried to the dressing-room by the stretcher bearers. We tried our best to make it as like a home hospital as possible, but it was difficult. There were no sanitary arrangements whatsoever. Every drop of water we used had to be carried from some distance, and it was by no means possible always to have hot water. There was one bath for the whole establishment—we had 150 beds—which had to be commandeered in advance by the sisters when they wanted to have their particular men washed. That, of course, was a big wash, and could not be secured more than about once a fortnight for each ward, so we had to do most of our washing in the wards.

We had Austrian prisoners to act as orderlies in all our wards. They were nice men, but some were very dirty and very lazy. They were good to the patients, but they had to be constantly watched. A few assisted in the dressing room, doing exceedingly good work there, for they liked it and their responsibility connected with it. Asepsis was impossible, but compared to the other hospitals there, ours was wonderfully clean. We insisted on fresh air, though the men rebelled, and on things being kept as clean as possible. Men used to come round once or twice a week with big cans of carbolic to spray the wards, beds, clothes, and "orderlies;" also all the passages and stairs where the latter slept.

Many severe cases were sent us. It seemed as if they selected the most hopeless for our care. We had any amount of bad femur cases, for which our doctors had to devise some form of extension. An iron rod, kept in position by two pieces of wood, was stretched from the top to the foot of the bed. Extension was applied by means of a bag weighted with stones, and then the leg was secured in a good position by slings tied to the iron rod. It was very effective in giving the patients greater ease, but it was slow work taking the whole thing down for dressings, and then having to tie it all

up again. The septic condition of these wounds was terrible. Tubes had to be used always to drain away the quantities of pus which gathered day after day. We had also several cases of feet which had become gangrenous from frost-bite, or as a result of fever and neglect. In many cases they were so far gone that amputation was necessary. Despite the septic surroundings most of the operations were very successful.

Another of our wards was entirely given up to recurrent fever cases. It was kept as isolated as possible, but it was not a very successful isolation, for the orderlies in the ward mixed with those of other wards, and even slept with them without being disinfected. It was not in our power to alter this. The recurrent cases were extremely interesting to follow as the fever ran its course, and many of the charts are well worth study. To our horror, a good many cases of typhus developed in our hospital. Men were sent to us who had the disease, but not at such an advanced stage as to be recognised as typhus. Immediately it became evident, the men were removed to a Serbian hospital; not that we were afraid of it, but it was only fair to the other patients. Patients and orderlies alike lived in dread of it. The men wept, and said they saw open graves before them. We believed them, but they had to go.

There is another unit of the Scottish Women's Hospital in Kragujevatz, which is running a hospital of 250 beds entirely for typhus. They are working on as sanitary lines as possible. They have, too, what we never saw in Kragujevatz—a ward for women. All the hospitals seem to be filled with men only. Where all the women and children are is a mystery. They must simply be left to die at home unattended. The nurses in the typhus hospital are running terrible risks, but we must have been even more so, for we were continually nursing typhus cases unawares, and so not taking the precautions for our own safety which we would have taken had we known. But even with care it is a terrible disease to nurse, and many of our staff have already succumbed to it.

As ours was a surgical hospital some of the cases were not too serious, and we had the satisfaction and pleasure of seeing many of our patients leave for their homes for a short furlough before going to the front again. They were naturally all glad to be going home, but they were, one and all, sorry to leave our

hospital. We had men of various nationalities—even Turks—but mostly Serbians, and they all made delightful patients. They were grateful for everything that was done for them. Those who were not too ill used to look forward to their visits to the dressing-room, where they had their likes and dislikes for the different doctors and nurses who dressed them. They delighted in telling us how the bandages should be put on, and very often, when our backs were turned, they would undo a dressing which they did not approve, and we would have to do the whole thing over again.

One curious custom which many of the men followed was to tie a belt or a tape tightly round their waists. It was so tight often as to cut right into them. Many reasons were given us for this. One man said he had worms, and he wore the belt to choke them. Most of them said they had a pain, and this made it feel better. We had a hard struggle to get them to discard these tapes, but we did conquer in the end.

So it was with all our schemes. We had to carry everything by force. Some said there was no use trying to force British customs on Serbian hospitals; but we knew our ideas were right, and insisted on them being carried out as far as possible. There is no doubt we set up a standard which was approved of by all Serbians, and which they will be sure to take as an example whenever they can get a moment's respite from the terrible affliction they are now enduring.

Obituary.

ON SERVICE.

FLEET-SURGEON ADRIAN ANDREW FORRESTER, M.B., Ch.B.GLASG.,
ROYAL NAVY.

WE regret to announce the death of Mr. A. A. Forrester, of H.M.S. Battleship *Implacable*, who was killed in the bombardment of the Dardanelles on 25th April. He studied at the University of Glasgow, where he took the degrees of M.B., Ch.B., in 1897. He entered the Navy as surgeon in November, 1898, became staff-surgeon in 1906, and fleet-surgeon on 8th November, 1914. He joined the *Implacable* on 11th February, 1914.

LIEUTENANT GEORGE MUNRO MACLEOD, L.R.C.P. & S.E., L.R.F.P.S.G.,
R.A.M.C.

WE regret to announce the death of Lieutenant G. M. MacLeod, which occurred on 22nd May in the R.A.M.C. Hospital, Cambridge. The son of the late Mr. William MacLeod of the City Chambers, Mr. MacLeod was educated in the medical schools of Glasgow, and took his qualification in the year 1909. He then settled in practice in the Eastern District of Glasgow, but, after the outbreak of war, went out with the Scottish Red Cross Hospital to Rouen. Obtaining his commission as Lieutenant at a later date, he was attached to the 2/1st Highland Mounted Brigade Field Ambulance, and contracted in the performance of his duties the attack of pneumonia from which he died.

PETER FRANCE ROBERTSON. M.D.GLASG., F.R.F.P.S.,
MILNGAVIE.

WE regret to announce the death of Dr. P. F. Robertson, which occurred at Milngavie on 16th May. Dr. Robertson, who celebrated last December his jubilee as medical officer to the parish of Milngavie, was born in Paisley in 1842, and was in his seventy-third year. He was educated at Glasgow High School and subsequently at Glasgow University, where he studied medicine under Lister and Gairdner. In 1863 he took the degree of M.D., and thereafter served as house physician and house surgeon in Glasgow Royal Infirmary under Dr. Scott Orr and Dr. James Morton. He settled in Milngavie in 1864, and in 1866 he became a Fellow of the Royal Faculty of Physicians and Surgeons. During the fifty years of his professional career Dr. Robertson held many medical appointments, and had a large practice which extended far into the country districts around Milngavie. He was for thirty-seven years certifying factory surgeon and medical officer of health for the burgh, retiring from the position in 1911. He was keenly interested in Volunteering, and was Surgeon Lieutenant-Colonel, V.D., of the 1st Dumbartonshire Rifle Volunteers, Brigade-Surgeon of the Clyde Volunteer Infantry Brigade, and Senior Medical Officer of the Clyde Defences.

At the time of his jubilee he was presented with a silver service by the New Kilpatrick Parish Council, and on that occasion the chairman's address gave appropriate expression to the feelings which were entertained for him in the district, where his devotion to duty and his generous response to the calls made upon him by the poor had earned for him widespread friendship and respect.

DAVID CAMPBELL, L.R.C.P. & S.E., L.R.F.P.S.G.,
TAYNUILT.

WE regret to announce the death of Mr. David Campbell, of Taynuilt, which occurred at Oban on 28th April. Mr. Campbell, who studied medicine at Glasgow University, and also at Anderson's and St. Mungo's Colleges, took the qualifications

of L.R.C.P. & S.E. and L.R.F.P.S.G. in 1898. Although throughout his professional career he was a sufferer from the malady of which he died, and therefore established no independent practice, he was widely known in Oban through his association with Dr. Currie of that town. His interest in his work was as keen, and his knowledge of it as wide, as if no limitations of ill-health had stood in his way. His early death will bring grief to the wide circle of those by whom he was esteemed and loved.

JOHN ALEXANDER PATON, M.B., C.M.GLASG.,
BATHGATE.

WE regret to announce the death of Mr. J. A. Paton, which occurred on 13th May. Mr. Paton was a student of the University of Glasgow, taking the degrees of M.B., C.M., in 1903. He subsequently settled in Bathgate, where he built up a considerable practice, and where he died suddenly at a comparatively early age.

JOHN BROOM, M.B., C.M.GLASG.,
KIRRIEMUIR.

WE regret to announce the death of Mr. John Broom, which occurred in Crosshill at the house of his parents on 18th May. Mr. Broom studied medicine at Glasgow University, and took the degrees of M.B., C.M., in 1886, subsequently settling in Kirriemuir. He died at the age of 49 years.

CURRENT TOPICS.

UNIVERSITY OF GLASGOW: DEGREE OF LL.D.—In the list of those to receive the honorary degree of LL.D. from the University of Glasgow at the summer graduation ceremony, there occurs the name of Dr. G. S. Middleton. The honour done to the late senior physician of the Royal Infirmary will be widely appreciated by the many members of the medical profession throughout the West of Scotland who have learned medicine from his lips, who have profited by his counsel, or who know and value him as a friend.

APPOINTMENTS.—The following appointments have recently been made:—

Elizabeth T. Robertson Butler, M.D.Glasg. (M.B., 1900), to be Bacteriologist to the Scottish Women's Hospital, Creil, France.

T. R. Hunter, L.R.C.P. & S.E., L.R.F.P.S.G., to be Certifying Factory Surgeon for the district of Cardenden, Fife.

Catherine L. Smith, M.B., Ch.B.Glasg. (1899), to be District Medical Officer of the Lincoln Union.

Royal Navy (1st May): Temporary Surgeon W. B. Cunningham, M.B., Ch.B.Glasg. (1909), to *Actaeon*.

13th May: Surgeon C. Ross, M.D.Glasg. (M.B., 1905), is promoted to the rank of Staff Surgeon in His Majesty's Fleet.

17th May: R. Tennent, M.B., Ch.B.Glasg. (1914), entered as temporary Surgeon.

Royal Army Medical Corps (24th April): To be temporary Lieutenants—J. Paton, M.D.Glasg. (M.B., 1901); J. B. Alexander, M.B., Ch.B.Glasg. (1911); J. A. Gentle, M.B., C.M.Glasg. (1889); J. Wylie, M.B., Ch.B.Glasg. (1914); W. Harvey, M.B., Ch.B.Glasg. (1903); D. Fisher, M.B., Ch.B.Glasg. (1909); J. Connell, M.B., Ch.B.Glasg. (1913).

3rd May: To be temporary Lieutenants—D. Riddell, M.D.

Glasg. (M.B., 1902); E. W. Milne, M.B., Ch.B.Glasg. (1900); J. M. Macphail, M.D.Glasg. (M.B., 1889); R. S. Dewar, M.B., Ch.B.Glasg. (1905); T. Strain, M.D.Glasg. (M.B., 1906).

10th May: To be temporary Lieutenants—N. Campbell, M.B., C.M.Glasg. (1891); J. M'Gowan, M.D.Glasg. (M.B., 1896); R. M'C. Service, M.D.Glasg. (M.B., 1884); J. Porter, M.B., Ch.B. Glasg. (1904); A. Waugh, M.B., C.M.Glasg. (1899); J. H. Marshall, M.B., Ch.B.Glasg. (1904); J. Rowat, M.D.Glasg. (M.B., 1886); J. J. Robb, M.D.Glasg. (M.B., 1892); C. C. Finlater, M.D.Glasg. (M.B., 1903).

17th May: To be temporary Lieutenant while serving with the Welsh Hospital—W. MacAdam, M.B., Ch.B.Glasg. (1909), B.Sc.

18th May: To be temporary Lieutenants—J. W. Turner, M.B., Ch.B.Glasg. (1901); J. Boyd, M.B., C.M.Glasg. (1895); J. Brunton, M.D.Glasg. (M.B., 1898); J. M. Mackay, M.B., Ch.B.Glasg. (1915); D. M'D. M'Intyre, M.B., Ch.B.Glasg. (1915).

20th May: To be temporary Lieutenants—J. H. N. F. Savy, M.B., Ch.B.Glasg. (1910); J. D. MacKinnon, M.B., Ch.B.Glasg. (1911).

Scottish Command Orders (7th May): The following have taken over duty as civil medical practitioners at the places mentioned:—A. Young, M.B., Ayr; W. F. Brown, M.B., C.M. Glasg. (1886), Ayr; J. S. Geikie, M.D., Ayr; R. C. Robertson, M.B., C.M.Glasg. (1891), Kilmarnock; C. Wish, M.B., C.M.Glasg. (1885), Pollokshaws; J. C. Herbertson, M.D.Glasg. (M.B., 1883), Johnstone; W. A. Pride, M.B., C.M.Glasg. (1895), Barrhead; W. F. Macdonald, M.B., Glasgow; A. M. Macdonald, M.B., Ch.B. Glasg. (1909), Girvan; J. Baird, M.B., C.M.Glasg. (1889), Glasgow; J. Drew, M.D.Glasg. (M.B., 1869), Stirling.

18th May: Colonel D. J. Mackintosh, M.V.O., from Assistant Director of Medical Services, 52nd (Lowland) Division, to be Assistant Director of Medical Services, 2/1st (Lowland) Division. Captain D. Ross Kilpatrick, M.D.Glasg. (M.B., 1901), R.A.M.C. (T.F.), has been attached to the 1/5th Battalion Argyll and Sutherland Highlanders, from the 17th (3rd Glasgow) Battalion H.L.I., as from 8th May.

DIPLOMA IN PUBLIC HEALTH.—At the examinations concluded

in Glasgow on the 8th April for the diploma in public health of the Scottish Conjoint Board of the Royal College of Physicians and Surgeons of Edinburgh and Royal Faculty of Physicians and Surgeons of Glasgow the following candidates, having passed the necessary examinations, obtained the qualification of D.P.H.:—William Leslie Lyall, Edinburgh; Douglas Martin, East Calder; Isaac Joseph M'Donough, Edinburgh; James Nathanael Todd, Harrogate. The following candidates passed the first part of the examination:—Wilfrid Samuel Hamilton Campbell, Lisburn, Co. Antrim; James Crocket, Bridge of Weir; John Carstairs Drysdale, Colinton, Mid-Lothian.

RESIGNATION OF DR. ALEXANDER JOHNSTON.—We regret to intimate that Dr. Alexander Johnston, physician-superintendent of Belvidere Fever Hospital, has sent in his resignation of that office, and that it has been accepted by the Corporation Health Committee. Dr. Johnston has been in the service of the Corporation for twenty-two years, first in Belvidere Hospital and, later, in Ruchill Hospital, from which, in April, 1909, he returned to Belvidere. His resignation is to take effect as from 1st June, and he retires with an allowance of one year's salary in recognition of his services.

DEATH-RATE DURING THE FIRST QUARTER OF 1915.—Dr. A. K. Chalmers, medical officer of health for Glasgow, has issued the following statement with regard to the death-rate during the first three months of the year:—

Although the death-rate for the first quarter of the year is usually greater than in any subsequent period, it cannot have escaped attention that the rate recorded in recent months has been maintained at a considerably higher level than usual.

The information now becoming available for other populations indicates that the causes of this increase are widely distributed, and practically affect all the large towns in the country. In Glasgow the rates since 1913 were 20·2, 18·1, and 22·2; in the eight principal towns in Scotland 19·5, 18·4, and 22·8; and in the 96 great towns in England 16·1, 15·9, and 19·5. The combined population of these latter is over 18 millions, and of the principal towns in Scotland over 2 millions.

Detailed information as to individual causes of death

elsewhere is not available, but a rapid summary may be made of the diseases mainly affecting the rate for Glasgow. The biennial swing of certain diseases of childhood, but particularly of measles and whooping-cough, make the experience of 1913 more comparable with the past quarter than that of 1914; and in the first quarter of the present year the deaths from all causes and at all ages exceeded those in 1913 by 791. Of this excess, 555 were contributed by deaths at ages under 5, 145 by deaths at ages 5-60, and 91 at later ages.

Almost two-thirds of the increase can be ascribed to the infectious diseases and diseases of the lungs, excluding phthisis, 267 being attributable to infectious disease, especially whooping-cough, and 234 to pneumonia and the other forms of lung disease. Deaths from phthisis were slightly less numerous, but the deaths from pneumonia were increased by 73. A heavy toll of child-life and marked susceptibility to fatal forms of lung disease are fairly constant features of every increase in our death-rate.

The mean temperature of February, 1915, was almost two degrees below that of 1913, and the rainfall of the first quarter 3 inches less than in 1913.

HOSPITAL SUNDAY FUND: MAJORITY OF GLASGOW MOVEMENT. —The Glasgow Hospital Sunday Fund this year attained its majority, and in recognition of the event a volume has been prepared containing a summary of the annual reports of the fund since its commencement twenty-one years ago. Early in his tenure of office as Lord Provost of Glasgow, Sir James Bell proposed a Hospital Sunday Fund for the three great infirmaries of the city. At that time separate appeals were made to the churches annually by the Royal, Western, and Victoria Infirmaries. The Hospital Sunday idea was to make one appeal yearly for a simultaneous collection, and to allocate the sum received to the three infirmaries in proportion to the work done by each. Meetings convened by the Lord Provost were held to consider the scheme. The idea at once met with the hearty approval of clergymen and influential laymen of all denominations. The proposal immediately took concrete form, and was a success from the beginning. The three appeals to the churches by the infirmaries in the year immediately preceding

brought in only £2,090, whereas the first year's collections under the auspices of the Hospital Sunday Committee amounted to £3,640. The year just closed is a record one in point of income, the amount received (£5,224) being £376 over that of the previous twelve months. The fund, though comparatively small, is acknowledged as a valuable aid to the income of the infirmaries, and the committee are encouraged to believe that the record of income has not yet reached its limit. Mr. Henry Johnston is secretary and treasurer of the fund.

INDIAN MEDICAL SERVICE.—The Secretary of State for India in Council has decided that after the open competitive examination announced to be held in July, 1915, for admission to the Indian Medical Service, no similar examination will be held during the continuance of the war. Such appointments as may be required to meet the absolutely indispensable needs of the Service will be made by nomination by the Secretary of State. After the war the Secretary of State will make further appointments to the Service from among duly qualified persons, European and Indian, who have held temporary commissions in the Indian Medical Service or the Royal Army Medical Corps during the war, and have served with the British or Indian Expeditionary Forces or hospitals and hospital ships for soldiers. The date of the resumption of competitive examinations and the conditions of such examinations will be announced in due course.

ANTITYPHOID INOCULATION IN THE ARMY.—In the House of Commons on 4th May, Mr. Tennant, replying to Sir C. Warner, said that the latest information with regard to the incidence of enteric fever among the British Expeditionary Force showed that 966 cases had occurred. Of these 780 had been analysed. 142 cases occurred among those inoculated fully with two doses of vaccine, and there were 10 deaths, giving a case mortality of 7 per cent. 157 had occurred among those who had had only one dose of vaccine. Among them there were 10 deaths, or a case mortality of 6·36 per cent. Among the uninoculated men there had been 481 cases, and 100 deaths had occurred, giving a case mortality of 20·9 per cent. To appreciate the whole value of these figures, it must be brought to notice that 90 per cent

of the troops had been voluntarily inoculated, and therefore among the 90 per cent there had been 299 cases and 20 deaths, and in the other 10 per cent, 481 cases and 100 deaths.

It may make the contrast even clearer to assume that we have an army of half a million in France; although the number is certainly greater. On that assumption 450,000 would be inoculated, among whom 299 cases have occurred, with 20 deaths—1 in 22,500; while among the 50,000 who would be uninoculated there have been 481 cases with 100 deaths—1 in 250. The value of antityphoid inoculation could hardly be more conclusively proved.

THE SCOTTISH WOMEN'S HOSPITAL IN SERBIA.—We trust that the article which appears upon another page may serve a useful purpose in calling attention both to the appalling conditions under which the Serbian sick and wounded have to be treated, and to the arduous and devoted work which is being done by the staff of the Scottish Women's Hospital. The author, Miss M. W. Hutchison, is a member of the Voluntary Aid Detachment, who has just returned from six months' service with the 1st Unit of that Hospital. She writes, therefore, with her eyes still full of the sights she has so lately left behind, and her vivid but not overcharged description should do much to bring home to us the reality of the desperate suffering of the little nation which was first to be attacked, and whose people have been perhaps more sorely tried than any other in the war. Realisation must bring with it the desire to help; and the most practical form of help is a contribution to the funds, and therefore to the efficiency, of the Scottish Women's Hospital.

RED CROSS SOCIETY: NEW HOSPITAL IN BELLAHOUSTON PARK.—Under the auspices of the military authorities, and through the good offices of the Corporation of Glasgow, the Executive of the Scottish Branch of the Red Cross Society have acquired ground in Bellahouston Public Park for the erection of a "hatted hospital" with accommodation for 700 patients. The site has a good exposure and is within reasonable distance from the terminal railway stations. The hospital will be a first-line military hospital, and it is anticipated

that it will be ready for occupation in about two months. It will be housed in seven blocks, constructed of wood and communicating with one another. Each block will contain two wards of 50 beds each. The administrative buildings and the accommodation for the staff will be provided in adjacent erections of the same material. Before coming to a decision as to the erection of the hospital, representatives of the Executive of the Scottish Branch visited hospitals of the same character at Cambridge and Netley. The plans have been prepared by Mr. Skipper, of Cambridge, who has had extensive experience of work of this class, and special provision has been made to meet the climatic conditions of Scotland.

While the hospital will be located in Glasgow, it will not in any sense be a local institution. It is being erected in the West in order to comply with the requirements of the military authorities, who found it impossible to secure permanent buildings suitable for hospital purposes there. In naming the hospital the "Scottish National Red Cross Hospital," the Executive have indicated their desire that the undertaking should be treated as a national one, and they count upon the support of the nation. The cost of the erection and equipment of the building and of the subsequent maintenance and upkeep will be heavy, and the Executive urge that it is imperative that Scotsmen at home and abroad should by prompt and regular contributions enable their National Society for the relief of sick and wounded soldiers to play a worthy part in the great national crisis.

The list of subscriptions towards its cost has been opened in very generous fashion by a member of the Executive who desires to remain anonymous. In forwarding to the honorary treasurers a cheque for £1,000, he writes:—"As the general funds of the Society will have to bear the heavy charges of maintaining the many Red Cross organisations now in active operation both at home and abroad, it would be very gratifying if the whole cost of the new hospital could be met by special contributions, without having to encroach upon the general funds."

GLASGOW MEDICAL CASUALTIES.—In the list of casualties issued on 28th April the name of Lieutenant J. A. Stenhouse,

R.A.M.C. (T.), appears as missing. Lieutenant Stenhouse, who was attached to the 8th Battalion Durham Light Infantry, is a graduate of Glasgow University, where he took the degrees of M.B., Ch.B., in 1908. He is the son of one whose figure was very familiar to many generations of Glasgow students—the late Mr. Alexander Stenhouse, the well-known bookseller of University Avenue. Lieutenant Stenhouse, who was house surgeon to Durham County Hospital, received his commission in the R.A.M.C. (T.) in June, 1913.*

The relatives of Lieutenant Guy D. L. M'Lean have been informed that he has been wounded in the thigh, and is now in one of the base hospitals. Lieutenant M'Lean, who is a son of the late Mr. Andrew M'Lean, of Dalserf, studied at Glasgow University, where he took the degrees of M.B., Ch.B., two years ago. After practising in Doncaster for a year, he received a surgical appointment in Sunderland Royal Infirmary. Volunteering for service on the outbreak of war, he was called up in September to Aldershot, and went to the front in January with the 3rd Monmouth Territorial Regiment.

News has recently been received of the death of Lieutenant Thomas Arthur Letters, of the Gordon Highlanders, who was killed in action at Neuve Chapelle on 13th March, and was reported "missing, believed killed," in the casualty list of 16th March. Lieutenant Letters was a native of South Africa, and a graduate in Arts of the Cape of Good Hope University. He came to Glasgow to study science and medicine, and had already taken the B.Sc. degree of Glasgow University, with special distinction in anatomy and physiology. He was in the fourth year of his medical course, and his conspicuous success as a student gave promise of a distinguished professional career. He had been for two years a member of the Officers' Training Corps, and volunteered at the outbreak of war. He was gazetted to the Special Reserve Battalion of the Gordon Highlanders, and went to the front early in November.

WAR EMERGENCY: THE NEED FOR MEDICAL MEN.—If one compares a quarter of a million or thereabouts—the size of our army in peace—with two and a half millions, the number of

* A subsequent casualty list, issued as we go to press, conveys the information that Lieutenant Stenhouse is a prisoner of war.

men we shall have serving abroad in the near future, and, in addition, reserves in training at home, one can form some idea of the urgency of the appeal which Sir Alfred Keogh, the Director-General of the Army Medical Service, has made for the services of medical men. The British Medical Association has offered the assistance of its organisation, and Divisions all over the country have held meetings to support and forward his appeal. In the various Divisions of the Glasgow and West of Scotland Branch these meetings have been largely attended, and it goes without saying that members of the profession have only to understand what is required and expected of them to give their assistance and their services whole-heartedly.

On Thursday, 13th May, Surgeon-General Bourke, the Deputy Director of the Army Medical Service for the Scottish Command, and Colonel Copeland, R.A.M.C., met representatives of the Divisions in Glasgow and the West of Scotland in the Faculty Hall, and explained more fully what are the general medical requirements of the army, and what the requirements especially affecting this district.

The remarks of Colonel Copeland, who had come directly from consultation with the medical authorities of the War Office, were particularly impressive, and all present realised the clamant need for medical men who could give their whole-time services. This means taking a temporary commission in the R.A.M.C. The rank is Lieutenant; pay, 24s. a day, with a small mess allowance, and with a kit allowance of £30. Wound allowance and widow's pension are those which usually attach to the rank, and there is a gratuity at the end of the war. Those under 40 will be sent abroad, in most cases first spending a month or two at the base hospitals, and then being transferred to the clearing hospitals, the field ambulance, and the regimental units. Those over 40 will be used at home in connection with certain whole-time hospital appointments, and in medical charge of certain camps where the part-time services of civilian practitioners are not convenient. It is not intended, at present at any rate, to appoint whole-time men to perform special work in connection with the army abroad. As the Surgeon-General remarked, what the authorities want are men who will go anywhere and do anything in the medical and surgical way. But no doubt in time, and as opportunity arises, those who take

commissions, and who are specially trained, say, as operative surgeons or as specialists in the various departments, will be given work for which they are specially fitted. The appeal for whole-time men has met, in this district as elsewhere, with a gratifying response, but we endorse Colonel Copeland's statement, made with a fuller knowledge of the requirements—more, many more, are needed.

Part-time services.—These fall roughly under three heads—camps, hospital, and the care of the practices of those who have joined the R.A.M.C. Where possible, the part-time services of medical men will be needed for the care of troops in camps in this country. For this purpose the man most acceptable is the one who can give fixed hours daily in the morning. Part-time services of a certain number specially trained in sanitary matters will be required.

Hospitals.—In addition to the general hospitals already existing—of which there are two in Glasgow at Stobhill, No. 3 and No. 4—a large extension of hospital accommodation is contemplated. For this purpose the staff will at first be drawn from the *à la suite* officers—those who are already, and those who have not yet been, mobilised—and it is intended to appoint these in the proportion of one surgeon and one assistant for every hundred beds. (This would seem to answer the complaint frequently heard against the members of the staff at Stobhill, and acknowledged by some of them themselves, that they are not sufficiently employed.) It is also in contemplation to establish hospitals to be run on semi-civilian lines. Residents in the proportion of one to every hundred beds will be appointed to these, with the rank and pay of a temporary lieutenant, R.A.M.C. The members of the visiting staff will be appointed under conditions similar to those obtaining in ordinary civil hospitals. They will not hold rank, and their pay will be settled in consultation with the Deputy Director of Medical Service. For these various part-time services there will be no dearth of willing applicants in Glasgow and the West of Scotland; the number of names already sent to the various secretaries of Divisions shows that. There is another, and most important, category of part-time service. This is the service performed by those who stay at home, in "safeguarding the practices and professional interests of colleagues who have

placed their services at the disposal of the Government." In Glasgow this is being loyally performed, to a great extent under the special care of the Local Medical Committee, and on conditions beneficial to the absent practitioner.

THE WORK OF THE R.A.M.C.—There appeared recently, in the columns of a West of Scotland newspaper, a letter from a well-known officer of the Royal Army Medical Corps (T.F.), at present attached to a battalion of a Highland Regiment which has suffered heavily in the fierce struggle in Flanders. The following extracts from the letter are made by permission of his representative, and give a vivid idea of the conditions existing during twenty-four hours of an engagement which lasted several days, and of the devotion to duty of which the R.A.M.C. has given such numerous examples:—

"On Saturday, the 13th, we were up at 4.15, and moved off shortly after. We crossed the field, and fell in behind half battalion at the C.O.'s place. After that we moved out to the road in front, and . . . came to a much smashed and red-brick farm with very much smashed galvanised iron barn, and entered trenches which had in them a foot or two of water. In doing this two men were killed and two wounded. Taking back one of the latter, a stretcher-bearer was wounded, and I had to get a substitute. I lay down for a bit behind the parapet of the trench, and decided that I should be able to do very little good there, so returned to almost where we had come from, and took shelter behind a stack of straw, sending word to the C.O. of my position, and promising to be up to the trenches at night. . . . The Brigade headquarters were for the time in another hay stack near mine. I went over to speak to the Brigade Major, and told him where I had fixed myself, but he put a hand on my shoulder and in awed voice said, 'The Colonel is gone, and the Adjutant is wounded,' and hurried on. . . .

"From time to time some wounded came, and one of the guards sitting down in front of the Headquarters' stack was wounded. I dressed him there, and talked a little with the Brigadier-General. About one o'clock a pleading message came from the Adjutant that he was suffering great pain and had taken some morphia pellets, but was not relieved—would I

come to see him ? I ordered my stretcher-bearers to take some sleep, as they would probably have to work all night. Then I . . . started off with the messenger. We went along beside the trenches, creeping and crawling until we presently reached the place. . . . I found that the Adjutant's revolver had been struck by a bullet, and the punch on the stomach this had given him had quite knocked him out. Part of the revolver had been splintered, and splinters had entered his wrists and abdomen. His pain had been very great, but his morphia was beginning to take effect, and shortly after I got him he fell asleep. Later, the pain came back very bad, and I gave him a hypod. The German trenches which our people were now occupying were in type and arrangement very like what I had been in before, but, fortunately for them, were at most places drier, and the dug-outs were wooden roofed. . . . I found that our people had been set to charge, and the shrapnel, machine-gun, and rifles hailed lead on them, and cut them up terribly. After a bit, I moved about in the trench and saw a great number of men, and applied a number of dressings. I also saw that they got water, and gave a few hypodermics. I collected a lot of wounded from all sorts of regiments in what had been an advance German mud-fort, with an opening communicating with the trench. There were injured men lying about who had been hurt for days before. About 100 yards from a low part of the trench one could see a wounded man in a kilt lying out by himself on a field. From time to time he raised himself a little and looked back at us, and then fell flat again. With two German bayonets I marked the line he was on, determined to send my stretcher-bearers for him when they should come down after dark, and, if need be, go out with them myself. But just at dusk two men got out of the trenches, walked calmly over to him, and picked him up and carried him off as if it were nothing at all.

"All day while I was waiting, the hail of the German shells poured on, shaking us every time, and often poured shrapnel into our trenches. In our advance position we did not seem to hear our own guns at all. At last came night and the stretcher-bearers, and I got out behind the trench and superintended their work. I was taken to where a lot of our men lay, including two officers, and on the way I passed a ditch full of

dead and dying. One poor officer, shot in the abdomen, was completing his second day. Face downwards, a bomb-thrower was lying breathing heavily, but when I passed again he was dead. Several poor creatures were moaning for stretcher-bearers, and many for water. One poor soul heard my voice, and called on me. I said, 'Where are you?' 'Here, sir,' he said, 'I am moving my hand.' At last I found the poor hand, and tracing up that got to his head, and was able to give him a drink. It was all so muddy and dirty and so difficult to move in, and there were such heaps and heaps of them, that, although there were stretcher-bearers from half a dozen regiments, they were quite overwhelmed. All the time the Germans were sending up lights, and bullets were singing around, and every little while the hellish shrapnel would come banging down. Having seen many in the trenches in the day time, I was able to guide each stretcher party to its own worst cases.

"After hours of helping to lift the wounded, directing, helping (and, in a state of madness at the whole horrid affair, often swearing like anything), I went back to see if the R.A.M.C. people—who were removing the patients from the aid post—could not come right down, but I found that the aid post was filling up quicker than they could get them away from it, and that on account of the shell-fire they could not bring the ambulances up, and had to carry all the poor souls a long way along the road. Besides, they had been at the same work night after night for days. Some blessed person had placed a water-cart near the entrance of the trenches, and each time I passed it I filled up my own and another water-bottle, and made the stretcher-bearers do the same. We eventually had to get Captain —— (now senior officer and in command of the battalion) to give us a lot of men to help, and so we worked on until daylight, when, on account of its arrival, we had to stop. How dirty my clothes were you can hardly imagine. My face I had not had washed since Tuesday morning, and my hands only occasionally in a ditch, and for twenty-four hours they were covered with clotted blood and mud, and were cracked and sore. The battalion was relieved just at daylight, and marched to the reserve trenches once more, so pitifully different from what it was when it left there last. Our total casualties were

5 officers (including the Colonel) and 280 N.C.Os. and men killed, and 11 wounded. Of the 27 officers who came out from Bedford with the batch, there are now only 8 of us still on the active list; and of the last draft of 5, only I remain."

GERMAN SCHOOL CLINICS AND THE WAR.—The following letter from Dr. Ernst Jessen, of Strassburg, received by the editor of *Oral Hygiene* (U.S.A.), has been reprinted in the May issue of the *Dental Record*. Dr. Jessen, whose letter was a reply to a communication asking how the dental clinics in German schools were affected by war conditions, is president of the International Commission for Mouth Hygiene, and has been actively employed in managing the free school dental clinics at Strassburg, which have been in operation for a quarter of a century:—

"I beg to extend to you my best thanks for your kind letter of 21st October, and think you in America must have a very correct impression of existing conditions in Germany.

"The fight for existence, that we now find ourselves engaged in, has to an extent altered social life, but still it has not been pushed from its beaten track, and through the healthy conditions of our inner life and the conviction of our eventual success, thanks to the bravery of our sons fighting outside of our frontiers, life here pursues the even tenour of its way.

"You expressed a desire to learn of the effect of the war on the public dental hygiene. Here we must draw a difference between care of the teeth of children in the clinics and the care of the military. Of course, in the interior of our country, the care of the teeth in schools has not changed at all. But with us on the frontiers of Strassburg, which remains in the active fields of military operations, it is a natural sequence that the school work should give way to the military needs. We have placed our school clinics entirely at the disposal of the army, and there are now at work seven military dentists with nine dental technicians. Every day there are some two hundred soldiers treated; since the beginning of hostilities a total of twelve thousand have been taken care of. About ten thousand extractions took place and among this number treated, we consider this a small average. When we find it impracticable to extend conservative treatment, extraction has

been resorted to, and five thousand sets of artificial teeth have been provided. Adjoining the dental station we provided a medical station to care for wounds of the jaws and face. Here there are five dentists and four technicians. A correct number of the dentists now active in the field can be found in the weekly *German Dental Review* in number forty-six. The number now amounts to 810."

The letter is interesting as showing how complete have been the German arrangements for the care of the health of their soldiers. It could not be expected to reveal what reports from both Eastern and Western fronts would seem to prove, that humanitarian conditions enter very little into this solicitude. A German soldier so severely wounded that he is unlikely to be of further service to the State is apparently the first to suffer neglect in times of pressure upon the medical staff.

"DIVINE HEALING."—We have received from Messrs. Morgan & Scott, London, a copy of *The Gospel of Healing*, by the Rev. A. B. Simpson, D.D. It is a new and enlarged edition of a book which has already passed through many, and may therefore be regarded as a widely-accepted interpretation of the doctrine of faith healing. As such, it is deserving of more than a cursory examination. It begins by setting out the scriptural foundation on which the doctrine rests. The first promise of healing, conditional on keeping the statutes of the Lord, was made after the passage of the Red Sea. Job was healed without a physician—none is mentioned, *ergo*—when he renounced his self-righteousness. The Psalmist says, "Bless the Lord, O my soul, . . . Who healeth all thy diseases." Asa "sought not to the Lord, but to the physicians. And Asa slept with his fathers." Christ healed the sick, and gave the power to His apostles. James directs that the sick shall be healed by the elders of the church, who shall pray over them, and anoint them with oil in the name of the Lord. This is a command, and "any other method of dealing with sickness is unauthorised." In the Epistle to the Romans it is said that "He that raised up Christ from the dead shall also quicken your mortal bodies by His Spirit."

The principles of divine healing are the following. Sickness is the result of the Fall, and is connected with Satan's personal

agency. Some intimation of a remedy ought therefore to be found in the preparatory dispensation—the Old Testament—which preceded the Gospel, and we find that distinct provision for divine healing is made in all the ordinances of Moses, and that the prophetic picture of the coming deliverer includes the concept of him as a great physician. If sickness be the result of the Fall, its relief must be included in the Atonement. The new physical life of Jesus after the Resurrection is the vital principle of physical healing in His name. It follows that the restored physical life must be wholly a new life, and this new life must come “as the free grace of God, without works, and without distinction of merit or respect of persons.” “Our healing must be wholly of God, or not of grace at all. If Christ heals, He must do it alone. This principle ought to settle the question of using ‘means’ in connection with faith for healing.” Faith without sight is the only condition of this blessing, and one doubt will destroy its efficiency. Further, we are under the obligation to obey the ordinance; there is “one great prescription for disease,” and any other course is “unauthorised and followed at our own risk.”

Objections to the doctrine are next considered. The statement that the age of miracles is past is met by the assertion that as the Mosaic age is past, and the millennial not yet come, we are still in the Christian age (*anno diaboli*, 1915!), and therefore in the age of miracles. The practices of spiritualism, animal magnetism, &c., may produce the same results as faith; but these are the spirits of devils working miracles. The continuance of miracles is not necessary to establish the facts of Christianity; nay, but every generation needs a living Christ. It is to the glory of God that we should submit to His will in sickness; then why do those who say so usually send for a doctor? If it is asked, Did not God make all these “means,” and does He not want us to use them? the answer is that God has nowhere prescribed medical “means,” and that we have no right to infer that drugs are ordinarily His “means;” that no reference is made to them in the whole history of the patriarchs; that in the first recorded case of medical treatment, after the time of Solomon, the patient dies under the stigma of unbelief; and that Luke abandoned his practice as a physician. God has not prescribed medicine; He has prescribed another way; all

the provisions of grace are by faith, not by works or means; "the use of remedies, if successful, usually gives the glory to man, and God will not permit that."

The rest of the book is occupied with practical directions, and with cases of faith healing from the Old and New Testaments.

We need not attempt to traverse in detail Dr. Simpson's arguments; they appeal, and probably will continue to appeal, to that class of mind which walks by faith rather than by sight. That many, if not all, doctors are reverent Christians would be beside the point to him, for they are tainted with a belief in works. But it is strange that one who so insists on the necessity of faith without sight as to state that "one doubt will destroy its efficiency" should rest his case upon argument at all. He follows, in fact, precisely the method of an experimental therapist writing upon the virtues of a particular drug. Such a writer would probably begin by a review of the recorded uses of the drug in earlier times, would discuss the principles of its action, would refute—perhaps with some acerbity—the objections alleged to its use by other experts, would give practical directions for its employment, and would conclude with a series of cases illustrating its beneficial effects. In thus following the scientific method, Dr. Simpson's appeal is rather to reason than to faith; and his procedure suggests a doubt whether after all his faith is of the kind that moves mountains. It is, indeed, to be hoped that it is not so potent, for it would seem to be consistent with a somewhat narrow creed. He who would deny to all the world, except those Christians who are guided by faith alone, participation in the physical or spiritual mercies of God, and who thinks of God as so concerned for His "glory" that He "will not permit" His creature man to have any of it, is better lacking the possession of miraculous powers.

LITERARY INTELLIGENCE.—*Sanitation in War* is the title of a new book embodying the lectures delivered by Major P. S. Lelean, Assistant Professor of Hygiene at the Royal Army Medical College. An introduction to the volume has been written by Surgeon-General Sir Alfred Keogh, K.C.B., M.D. It will be published about 1st June. The lectures are designed

to give an insight into army organisation, administration, and sanitary methods. The subjects with which the author deals are—Physical fitness for war; the march; the rôle of insects in war; medical organisation and administration in the field; antityphoid inoculation; sickness in the army; field conservancy; water and water supplies. When it is realised that in British wars of the last thirty years, forty times as many men were incapacitated by disease as were killed by the enemy, it will be seen how important a rôle sanitation plays in modern warfare. Illustrations to the number of 40 have been prepared from the lecturer's diagrams. The publishers are Messrs. J. & A. Churchill, of 7 Great Marlborough Street, London.

The Year Book of Radiology for 1915 is announced by Messrs. Longmans & Co. as in preparation, edited by Robert Knox, M.D., and James H. Gardiner, F.C.S. The object of the work is to give an account of the more recent advances in our knowledge of radium, x -rays, and the allied phenomena, both from the medical and physical point of view. The volume will comprise a series of authoritative articles by specialists working in radiology, and a directory of qualified medical men practising in radiography, x -rays, radium, and electro-therapeutics, both at home and abroad; also a list of hospitals and institutions where such treatment is carried out. Notices of new books and apparatus, legal information, physical data, hints for the laboratory, and all matters connected with the practice will also be included. The volume is intended to form, as far as possible, a bond of union for those engaged in the practical applications of the various forms of radiation both at home and abroad.

REVIEWS.

Gonorrhœa and its Complications in the Male and Female.

By DAVID WATSON, M.B., C.M. Glasg. London: Henry Kimpton. Glasgow: Alex. Stenhouse. 1914.

THE need for a dispassionate, scientific treatise on gonorrhœa in English has been long recognised. The subject has been unwarrantably regarded as unsavoury, and its description in most text-books has been relegated to an unimportant place and dealt with in few scanty pages, with corresponding response and neglect in the minds of practitioners. It is perhaps not quite creditable to our profession that this has been so, for the disease is a serious one, its remote effects grave; and, after all, it is diseased and not sinful man that we are concerned with, and we have no business to allow the slightest repugnance to the individual to influence us in treating his disease.

We venture to think that the need we have mentioned has been fully met by Mr. David Watson in this volume. The subject is attacked in a thorough and comprehensive manner, and the history, bacteriology, pathology, treatment of the disease, and its various complications and sequels, are fully narrated. It is most likely that the practitioner, while interested in the bacteriology and pathology of the disease, will display most interest—indeed, anxiety—in methods of treatment, and it is in treatment that Mr. Watson's book excels. He shows clearly how treatment carried out in painstaking, scientific fashion—so different from the haphazard methods commonly adopted—will produce good results, "having obtained by inspection and bacteriological examination a complete knowledge of all the sites where the gonococcus has secured a lodgment, these areas which are within reach are directly attacked." To the various methods of attack suggested by writers on the subject, the author adds original plans which have proved of great value in his hands; amongst the most notable of these

is his well-known lactic acid treatment of condylomata. Old phraseology dies hard in medicine, but our liking for an old term like "gonorrhœal rheumatism" should not stand in the way of scientific accuracy. Everyone now knows that the arthritides occurring in gonorrhœa are infective, and the causal agent is known, so that there seems no good reason for retaining the word "rheumatism." The author might also be more emphatic in indicating the necessity for very early passive and active movements in gonorrhœal joints. Murphy, of Chicago, treats these cases by aspiration and injection of formalin-glycerine solution, and warns his readers against immobilisation. Mr. Watson has been by no means carried away by all that is urged in favour of vaccine therapy. He admits freely that "we have not yet worked out the data necessary to enable us to use vaccine, with sufficient control over its therapeutic action, to justify its indiscriminate employment."

The volume contains abundant evidence of great industry. By careful collecting and assorting of facts, watchful estimating of opinions, and untiring personal laboratory and clinical investigation, the author has produced a book which ranks high as a scientific work, and probably merits first place in its own branch of medical literature.

A Text-Book for Midwives. By JOHN S. FAIRBAIRN, M.A., B.M., B.Ch.Oxon., F.R.C.P.Lond., F.R.C.S.Eng. With 3 Plates and 104 Illustrations (5 in Colour). London: Henry Frowde and Hodder & Stoughton. 1914.

IN his preface the author states "this *Text-Book* contains more than has hitherto been considered necessary for midwives, and is open to the criticism of going beyond what is required by them and of them." We certainly think that nurses should be thoroughly trained, but the time at their disposal is too short for the thorough study of such a book. The author says that there is an advanced school of practising midwives possessed with an insatiable thirst for knowledge. There may be in London, but we have not come in contact with any of them in Scotland.

The first part of the book is devoted to anatomy, physiology

and bacterial infection. The first twenty-five pages are printed in smaller type than the remainder of the book, and as the pages are very large, with over seventy long lines to each, the appearance of the pages would tend to damp the ardour of even a midwife with an insatiable thirst for knowledge.

The practical part of the book is very well written, and the many illustrations will be found to be most useful. The author has not attempted any advanced teaching, as the practice of the midwife is strictly circumscribed by the regulations of the C.M.B. However, he gives a few hints in small print for nurses in the colonial service or in mission fields.

There is a short chapter at the end of the book on cancer of the womb, in which the nurse's attention is drawn to the leaflet issued by the C.M.B. There is also an appendix giving a scheme of note-taking, and what observations should be made during labour and the puerperium. He also gives a few notes on drugs. There is also a glossary of terms not explained in the text.

The book is a good one, but we are afraid that it is too advanced and too large for the ordinary nurse. We can strongly recommend it to practising midwives with an insatiable thirst for knowledge.

Gynecology. Edited by EMILIUS C. DUDLEY, A.M., M.D., and HERBERT M. STOWE, M.D. The Practical Medicine Series. Vol. IV. Chicago: The Year Book Publishers. 1914.

IN a complimentary note attached to this book the following statement is made:—"Please note that the present volume is one of a series of ten issued at about monthly intervals, and covering the entire field of medicine and surgery. Each volume being complete for the year prior to its publication on the subject of which it treats." We trust the author was not responsible for this sentence. The reviewer's attention is called to the fact that the series is published primarily for the general practitioner.

The book is made up of short abstracts of papers published during the previous year on various gynæcological subjects. As an index it may be of use to gynæcologists, but we fail to see how it is to assist a general practitioner. The author adds

short comments to some of the abstracts, such as "The literature of the whole subject is vague and unsatisfactory;" "the grafting of human ovarian tissues has not fulfilled the hope of its enthusiastic advocates;" "the reader is not advised to undertake this operation without first consulting the original article, after which it is a question whether he will undertake it at all." We admire the frankness of the criticisms, and we hope that the general practitioners who may look to the book for guidance will be duly warned by them.

The book will be useful as an index for gynæcologists who wish to refer to recent papers on any subject, but we cannot see how it is to be of much use to general practitioners.

Diseases of the Kidneys, Ureters, and Bladder, with Special References to the Diseases in Women. By HOWARD A. KELLY, M.D., LL.D., and CURTIS F. BURNAN, M.D. Vols. I and II. London: D. Appleton & Co. 1914.

"THE present work has been undertaken and carried out . . . because no other work has been written which does more than squint at urology from the standpoint of the female sex. We have frankly taken this aspect of the subject as our fundamental position, and have done our squinting in the direction of urological problems in the male." Thus the authors in their preface.

On opening the two portly and heavy volumes before us our attention is at once caught by the illustrations. These are very numerous (well over 600); many of them are of large size, and are reminiscent of former work by the same artist, Mr. Max Broedel. This means that they possess not only great beauty, but also that they succeed in conveying to the reader a picture of the parts concerned and described in the text.

The impression formed upon a first view of the illustrations is that we have here what some of the former generations of surgeons disliked—a book of pictures; but further investigation of the volumes corrects this impression, and we find in the text much valuable information, often given at considerable length.

The anatomy, embryology, and physiology of the genito-urinary apparatus occupy close on 200 pages, and noticeable care has been taken with the topography of the lumbar region, and particularly with its muscles and fasciæ. Short chapters on the examination of the urine, pyuria, hæmaturia, and bacteriuria are followed by a lengthy account of methods of examining the urinary tract. Examination of the functional capacity of the kidney is also considered.

Incisions to expose kidney and ureter are fully described, the authors expressing a strong preference for the lumbar route of approach. In Chapter XV the surgical anatomy of the kidney itself is very fully gone into, and the authors make out a good case for the incision they recommend in nephrotomy. Chapter XVI deals with movable kidney, and the authors lean strongly towards trauma as the cause. The treatment is carefully gone into. Naturally, this chapter is followed by one on hydro-nephrosis, and in considering the treatment of this condition the authors lay stress on suspension of the kidney, which they say is "all that is necessary in a very large group of early hydro-nephroses due to the sagging down of the kidney" (p. 550). Although rightly emphasising this point, the authors describe other operative procedures, dealing directly with the renal pelvis and the ureter, and the impression we have is that the subject of treatment is very fairly expounded.

The most important contents of Volume II are the chapters on tuberculosis, calculi, and pyelitis; but we must mention Chapter XXVIII, on maldevelopment of the kidney and ureter, a subject which is of practical interest to the clinician, but which is apt to be neglected.

Coming to the bladder and urethra, we find interesting chapters on exstrophy, fistulæ, cystitis, prolapse of the urethra, &c.

Figures and text alike show that the authors approach the subject from the gynæcologist's standpoint. This notwithstanding, the work is a valuable contribution to the subject, and it abounds in practical points. While we are loth to say anything in dispraise, we wish, however, that the authors had made less full references to the work of others. Ignoring such work is, of course, indefensible; but we feel that the numerous and, in some cases, long references to other writers might have

been compressed without impairing the value of the present work, which, indeed, has just a tendency towards diffuseness. It is sure, however, to be widely consulted, not only for its finely executed illustrations, but also for its excellent text.

The Minor Horrors of War. By A. E. SHIPLEY, Sc.D., F.R.S.
London: Smith, Elder & Co. 1915.

To most of our readers the contents of this little volume must already be familiar, since they appeared quite recently as a series of articles in the *British Medical Journal*. Those who know them will be glad of the opportunity of possessing them in more permanent form. For those who do not it may be said that the minor horrors with which Dr. Shipley deals are the parasites of the skin, and also flies, mites, ticks, and leeches. The importance of a knowledge of the habits of these pests and of effective means of destroying them is evident; and the subject is so completely dealt with that it may safely be asserted that no R.A.M.C. officer is fully equipped who has not possessed himself of this book or of the knowledge it contains. The only quarrel which a reviewer can have with it is that Dr. Shipley so adorns his subject that it is impossible to be content with samples.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics.
By W. HALE WHITE, M.D. Fourteenth Edition. London:
J. & A. Churchill. 1915.

THE first edition of this popular handbook appeared in 1892, and the fact that this is the fourteenth edition almost of itself shows the worth of the book. It is in general similar to previous editions, with the numerous alterations necessitated by the new *B.P.* It is an exceedingly popular book with students and practitioners, and this edition will maintain its popularity. It is without doubt one of the very best of the smaller books dealing with the subject, and we cordially commend it.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

EDITED BY ROY F. YOUNG, M.B., B.C.

M E D I C I N E.

Endemic Goitre in the Highland District of Perthshire.

By N. Douglas Mackay, M.D. (*The Caledonian Medical Journal*, January, 1915).

—Dr. Mackay points out that in Scotland the goitrous districts, as compared with the great endemic foci of Central Asia or Central Europe, are insignificant, both as regards extent of area and intensity of the disease. He describes for the first time what he calls “the Loch Tay endemic goitre area,” namely, the district which extends from the confluence of the Tay and the Tummel to Killin at the head of Loch Tay (a distance of some thirty miles), and from the Lyon and Tay confluence, five miles above Aberfeldy, to about halfway up Glenlyon (a distance of fifteen miles). The surface configuration of the district is typically that of a mountainous region—a mass of elevated land rising into many lofty peaks, and cut into by comparatively narrow valleys. By far the larger portion of this tract of country is uninhabited mountain and moorland, the inhabited portion being practically limited to the lower lying strips of country lining the rivers. Most of the people are land workers. The greatest concentration of cases occurs in the village of Acharn (population, 90 to 100), where about 12 per cent of the people are affected. As regards the associated conditions of cretinism and deaf-mutism, cretinism is absent, and of the latter the author has been able to discover only two cases.

The Loch Tay endemic area, Dr. Mackay says, is a typical goitre district. The climate is temperate; it is a mountainous region, and most of the cases occur in the most sunless parts. There is abundance of lime and magnesia in the water and soil; it is entirely a rural district, and very largely a region of unprotected water supply, and the people are mainly land workers. He has not observed a case occur in a newcomer in less than a year.—ADAM PATRICK.

Splenectomy in Primary Pernicious Anæmia. By W. W.

Roblee, M.D. (*Journ. of the Amer. Med. Assoc.*, 6th March, 1915).—The author summarises his conclusions as follows:—Primary pernicious anæmia is probably due to a toxin which may be of bacterial, chemical, or parasitic origin, and in some cases there is an increase of the unsaturated fatty acids. The spleen seems to exercise an influence favourable to the elaboration of these substances. These

toxins appear also to cause a hyperæmia of the spleen pulp because of changes in the blood-vessels which cause the blood to be poured directly into the pulp. The presence of the spleen seems to cause a diminution in the amount of the total fats and cholesterins of the blood, which are anti-hæmolytic. For these theoretical reasons, and because of the numerous cases on record in which a cure has been obtained in Banti's disease (which is closely allied to pernicious anæmia), splenectomy appears to be indicated in these and the closely associated anæmias.

Removal of the spleen either in health or in sickness does not affect the patient injuriously. The operative mortality is not high, even in very weak patients.

A striking and rapid remission of all symptoms appears, the change in the blood picture coming quickly and quite certainly. It is too soon for us to know whether or not any patients will be permanently cured, but it is quite probable that a large percentage will succumb to the disease within a few months after operation. Other methods of treatment should be combined with splenectomy, as more than one factor is doubtless at work in these cases. It will certainly prolong life, and in our incomplete knowledge of the etiology of the disease, and the certainty that death will come under every other known method of treatment, he believes that these patients should be offered this additional chance of recovery. We must remember that some patients have been reported symptomatically well at the end of nine months, even though the blood was not entirely normal.

—ADAM PATRICK.

A New Test of Blood Serum and Cerebro-spinal Fluid in Syphilitic Involvement of the Nervous System. By Alfred Gordon, M.D. (*New York Medical Journal*, 20th February, 1915).—The writer says it has been his good fortune to devise a test which, after some study, has proved to be of value in syphilitic conditions. 0.5 c.c. of blood serum is placed in a test tube. Five drops of 1-100 solution of perchloride of mercury is allowed to fall slowly in the centre of the tube. The following phenomenon is observed:—If the serum comes from a normal individual, or from an individual suffering from any disease but syphilis (as proved by a Wassermann test), the moment the reagent comes in contact with the serum a cloudiness will appear, which will rapidly increase in density so that at the end of five, and sometimes ten, minutes, the entire—or almost the entire—amount of serum will present a thick gray mass, with a slightly greenish tint. In some cases the thickness appears at once; in other cases, shortly after the dropping of the reagent; and in still others, five or ten minutes later. In syphilitic sera the contact of the reagent produces not the foregoing thick mass, but only a foamy upper layer, which remains as such for some time. Here there is observed a distinct slight upper whitish and foamy layer, beneath which the normal serum is evident; the latter preserving the same appearance and colour as prior to the manipulation. The contrast between the amount of coagulum, its density, its appearance, and its colour is distinct. If these altered sera are allowed to stand over-night, the following striking condition will be observed:—The foamy whitish coagulum of the syphilitic serum will be dissolved and disappear, while the coagulum of the normal serum will fall to the bottom of the tube and will be covered by a clear layer of normal serum. The original cases examined for this test were seventeen in number, all organic affections of the nervous system—seven cases of tabes, one of general paralysis, three of myelitis, and six of cerebro-spinal syphilis.

Twelve cases of other forms of syphilis were afterwards examined, with the same result.

The same reagent, in the same solution and in the same quantity, was used in testing the spinal fluid. If five drops are allowed to fall in the centre of the test tube on 0·5 c.c. of spinal fluid, this will immediately—or very promptly—become cloudy if the Wassermann reaction in the same fluid is positive. If the latter is negative, the fluid will remain clear. After the fluids have been left for a few hours, the cloudiness of the syphilitic and the transparency of the non-syphilitic remain unaltered. The cases selected for the test on cerebro-spinal fluid were—five of tabes, three of cerebro-spinal syphilis, and one of transverse myelitis.

—ADAM PATRICK.

Experiments with Emulsions of Organs taken from the Dead Human Body and Sex Glands of the Lower Animals. By G. Frank Lydston, M.D. (*American Medicine*, December, 1914, p. 767).—The organs were removed from the bodies of persons who had died by accident, a few hours after death. An emulsion was made in saline solution, and this was sterilised by tri-kresol. Doses of this emulsion were then injected hypodermically. With kidney, no results were obtained. In some cases in which emulsion of brain and medulla was injected the patients felt invigorated. Three persons who received a dose of spleen emulsion were relieved of chronic constipation for from one to three weeks. Injections of liver were followed by no result, favourable or unfavourable. An emulsion of rams' testicles seemed to act as a general tonic.—ADAM PATRICK.

DISEASES OF THE EYE.

Wounds of the Eyes and Orbits During the War may be taken as the title of a short paper in the *Archives d'Ophthalmologie* (January-February, 1915) by Professor De Lapersonne.

It may be interesting to some to know that to the period of writing, the author had seen 80 cases of serious wounds of the orbital and ocular region.

The injuries may be inflicted by either conical rifle bullets, spherical shrapnel shot, or by portions of shell, bomb, hand grenade, or, lastly, by foreign bodies, stones, &c., propelled by the force of some other projectile. Thus there will be a very great variety of missile which may be the cause of the injury. Then the injury may be either antero-posterior or transverse, and the orbital wound may be only a minor part of a head injury.

In some cases a spent bullet was lodged in and ultimately extracted from the orbit, but in several a bullet passed transversely through both orbits and destroyed both eyes. In 7 out of 15 transverse injuries both eyes were so blinded, either by destruction of the eye or by rupture of the optic nerve.

Besides the injuries by direct violence, the writer speaks of injuries by concussion from the explosion of shells, bombs, mines, &c., at close range. In some cases death may occur, but minor injuries to the general nervous system, producing hysterо-traumatism, or to the retina, producing temporary blindness, are also seen.

Foreign bodies of all sizes and of a great variety of material may be found in the orbit and adjacent cavities. In many such cases even when a piece of metal is lodged and discovered by radiography, De Lapersonne advises that one be not in too great a hurry to remove it. If there is evidence that it is causing symptoms which may become worse, then it should be removed, of course, but if it is tolerated well, leave it alone.

Regarding treatment, De Lapersonne says that they use oxygenated water, isotonic serum, and Condy's fluid for washing the injured parts, according to suitability.

Tincture of iodine is used for all skin wounds and gives excellent results. They avoid union by first intention as somewhat dangerous, and prefer to let lid wounds granulate and attempt some rectifying operation later.

Excision of the eye has been done in many cases, of course, and De Lapersonne is strongly against the use of any conjunctival sutures. Sometimes he even uses an orbital drain. He dwells on the difficulty of being sure that there is no foreign body. In almost all cases antitetanic serum is injected at once.

Generally the results have been good, and the fact that of 80 cases there has been no death speaks for itself.—LESLIE BUCHANAN.

The Exact Definition of Blindness. By Harold Grimsdale, F.R.C.S.—The appointment of a Committee of Government to discuss "the whole question of blindness" has made it desirable that the precise meaning to be attached to the word "blindness" be accurately defined, so far as it is possible.

The matter has been brought before the Ophthalmological Section of the Royal Society of Medicine by Mr. Grimsdale in a more or less official manner, Mr. Grimsdale being a member of the Committee, in order to try to ascertain the mind of the members upon the subject.

The result is printed in the *Proceedings of the Royal Society of Medicine* for January, 1915.

It is evident that there is a wide divergence of opinion as to what is the meaning to be attached to the word "blindness." This difficulty in fixing a definite meaning which will be both useful and acceptable is experienced not only by laymen but by ophthalmic surgeons. It is, indeed, probable that to the ophthalmic surgeon the difficulty is really more great than to the layman, since the former is intimate with the various grades of defective sight in a way which the layman never can entirely grasp.

It is with the object of bringing out, by discussion, the general feeling of his colleagues that Mr. Grimsdale brought the matter before the Royal Medical Society Section of Ophthalmology. The result is, in a measure, disappointing, in so far as comparatively few definite statements of opinion were made.

Grimsdale went into the subject at some length, and pointed out what are some of the most important difficulties of the question, separating adults from children. He gives it as his opinion that an adult who cannot under any conditions see more than $\frac{3}{80}$ is blind for economic purposes, and should be considered so for legislative purposes. With this view many will agree. As regards the school child, anyone who cannot, even with correcting lenses, see to read $\frac{6}{80}$ should be treated as if blind.

Mr. Rockcliffe, who has had previous experience in the consideration of this subject in virtue of his holding a post in the Blind Institution, Hull, gives his

opinion in much the same terms. A person who can count fingers at 3 feet is not blind. A child who cannot see even with the aid of glasses $\frac{9}{16}$ should be educated at a blind school.

Mr. MacGillivray, Dundee, urged that the question be answered by examination of the inmates of the sixty-six institutions for the blind in the United Kingdom, and reporting the results to a Committee of the Section (then in session), whereby a true average might be arrived at.

Mr. Bishop Harman questioned the utility of framing any statement of opinion as to the precise meaning to be given to the word blindness. He rather advocated the certification of those supposed to be blind by two medical practitioners independent of one another, as is the case in lunacy certification. The special utility in this case would be that the medical certificates would be issued by practitioners resident in the neighbourhood, and familiar, more or less, with all the circumstances of the case.

Mr. Richardson Cross, Bristol, agreed that anyone who could not count fingers at 3 feet was economically blind.

Mr. Holmes Spicer thought that the Section should not be in a hurry to make definitions now, but rather offer help if it be wanted.

The president (Mr. Priestley Smith) reminded the Section that they had not been asked for either opinion or advice by the Committee, and pointed out that Mr. Grimsdale would have their entire confidence.

Generally speaking, it is manifest that the subject is an exceedingly difficult one since, besides the state of the vision, the state of the individual and the type of work must be considered.—LESLIE BUCHANAN.

Books, Pamphlets, &c., Received.

- Defective Children. Edited by T. N. Kelynack, M.D. London: John Bale, Sons & Danielsson, Limited. 1915. (7s. 6d. net.)
- The Gospel of Healing, by Rev. A. B. Simpson, D.D. New edition. London: Morgan & Scott. 1915. (2s. net.)
- Occupational Affections of the Skin: A Brief Account of the Trade Processes and Agents which give rise to them, by R. Prosser White, M.D.Ed., M.R.C.S.Lond. London: H. K. Lewis. 1915.
- Swanzy's Handbook of the Diseases of the Eye and their Treatment. Edited by Louis Werner, M.B., F.R.C.S.I., Sen. Mod. Univ. Dub. Eleventh edition. With illustrations. London: H. K. Lewis. 1915. (12s. 6d. net.)
- War Surgery, by Edmond Delorme. Translated by H. De Mérie. With illustrations. London: H. K. Lewis. 1915. (5s. net.)
- Leper Houses and Mediæval Hospitals, being the Fitzpatrick Lectures, by Charles A. Mercier, M.D. London: H. K. Lewis. 1915. (1s.)
- The Minor Horrors of War, by A. E. Shipley, Sc.D. Illustrated. London: Smith, Elder & Co. 1915. (1s. 6d. net.)
- Human Physiology, by Professor Luigi Luciani. Translated by Francis A. Welby. With a Preface by J. N. Langley, F.R.S. In five volumes. Vol. III (edited by Gordon M. Holmes, M.D.): Muscular and Nervous Systems. London: Macmillan & Co., Limited. 1915. (18s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDED 22ND MAY, 1915.

	WEEK ENDING			
	May 1.	May 8.	May 15.	May 22.
Mean temperature, . . .	50·3°	50·3°	44·4°	51·3°
Mean range of temperature between highest and lowest,	18·2°	18·3°	16·2°	20·3°
Number of days on which rain fell,	1	0	2	2
Amount of rainfall, . . ins.	0·03	0·00	0·58	0·15
Deaths (corrected), . . .	437	380	406	373
Death-rates,	21·1	18·4	19·6	18·0
Zymotic death-rates, . . .	3·4	3·7	3·8	2·7
Pulmonary death-rates, . .	4·9	4·4	4·2	4·2
DEATHS—				
Under 1 year,	81	90	77	74
60 years and upwards, . .	109	86	94	110
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	25	35	40	26
Scarlet fever,	3	3	2	5
Diphtheria,	2	2	3	1
Whooping-cough,	42	34	33	22
Enteric fever, . . . . .	...	...	...	1
Cerebro-spinal fever, . . .	2	3	3	2
Diarrhœa (under 2 years of age),	1	6	3	2
Bronchitis, pneumonia, and pleurisy,	76	65	59	67
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Cerebro-spinal meningitis, .	4	9	9	3
Diphtheria and membranous croup,	28	15	13	24
Erysipelas,	27	25	28	33
Scarlet fever,	83	98	76	82
Typhus fever, . . . . .	...	1	...	...
Enteric fever,	7	6	2	4
Phthisis,	60	80	58	42
Puerperal fever,	2	4	5	4
Measles,*	493	547	624	805

* Measles not notifiable.

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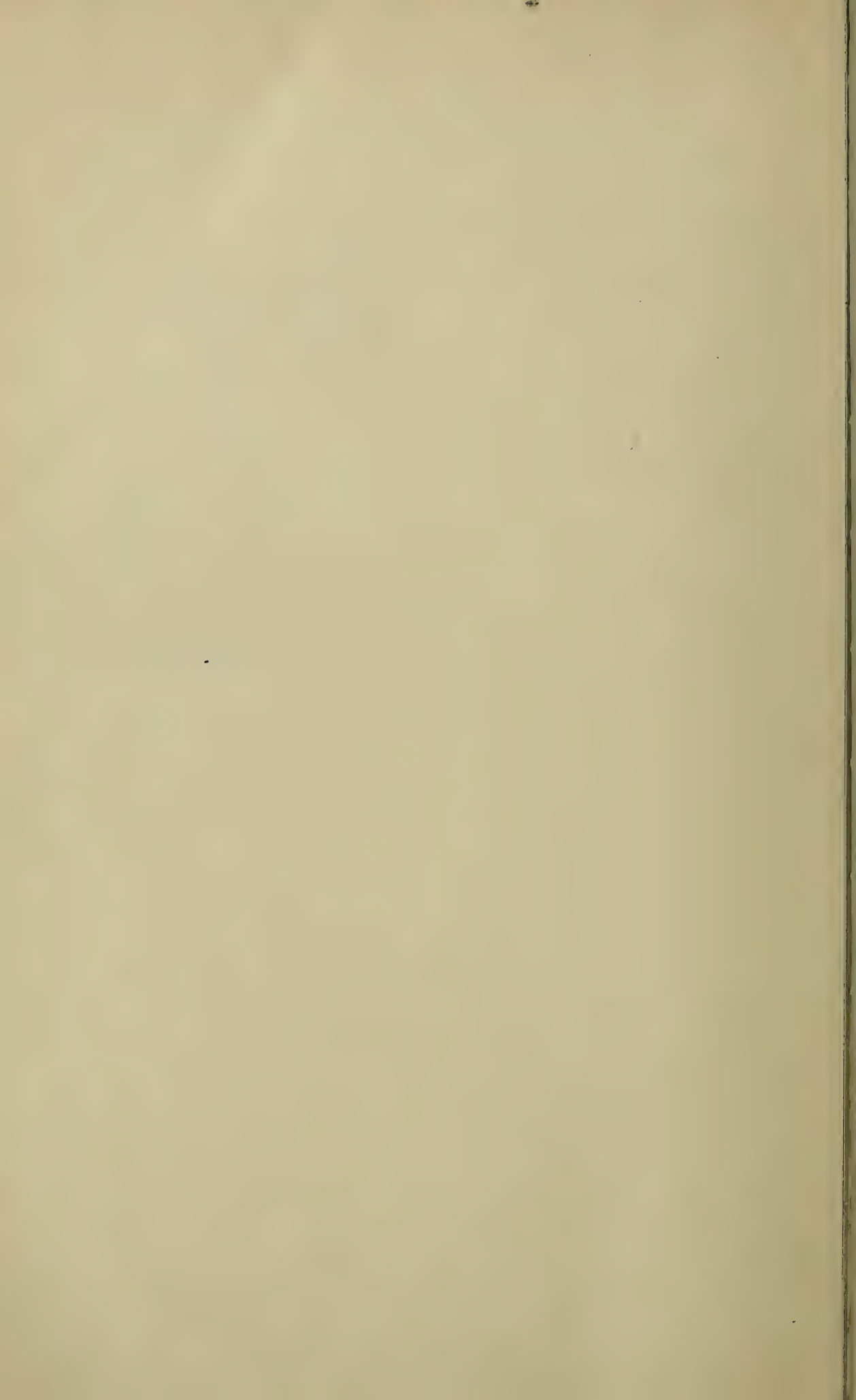
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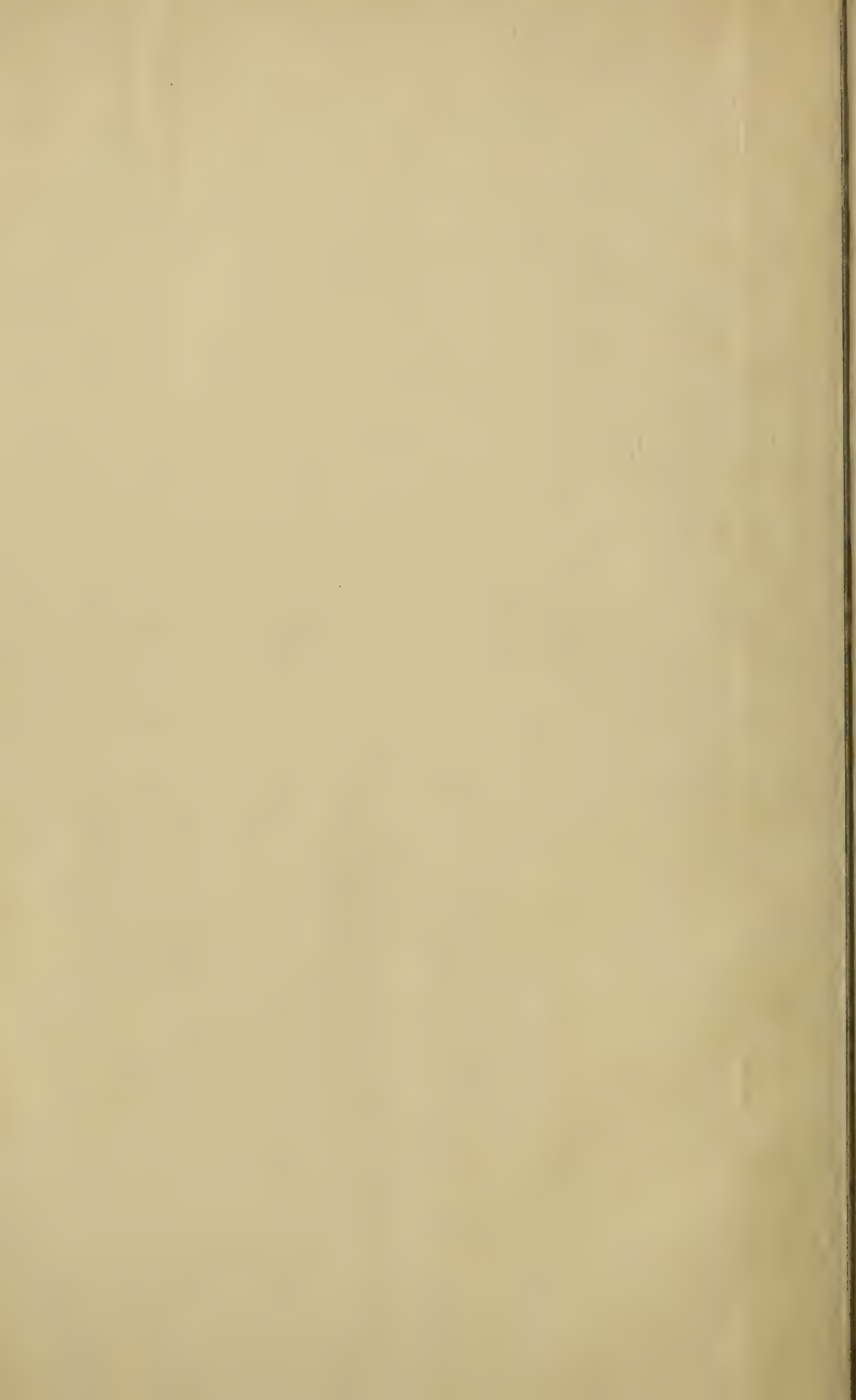
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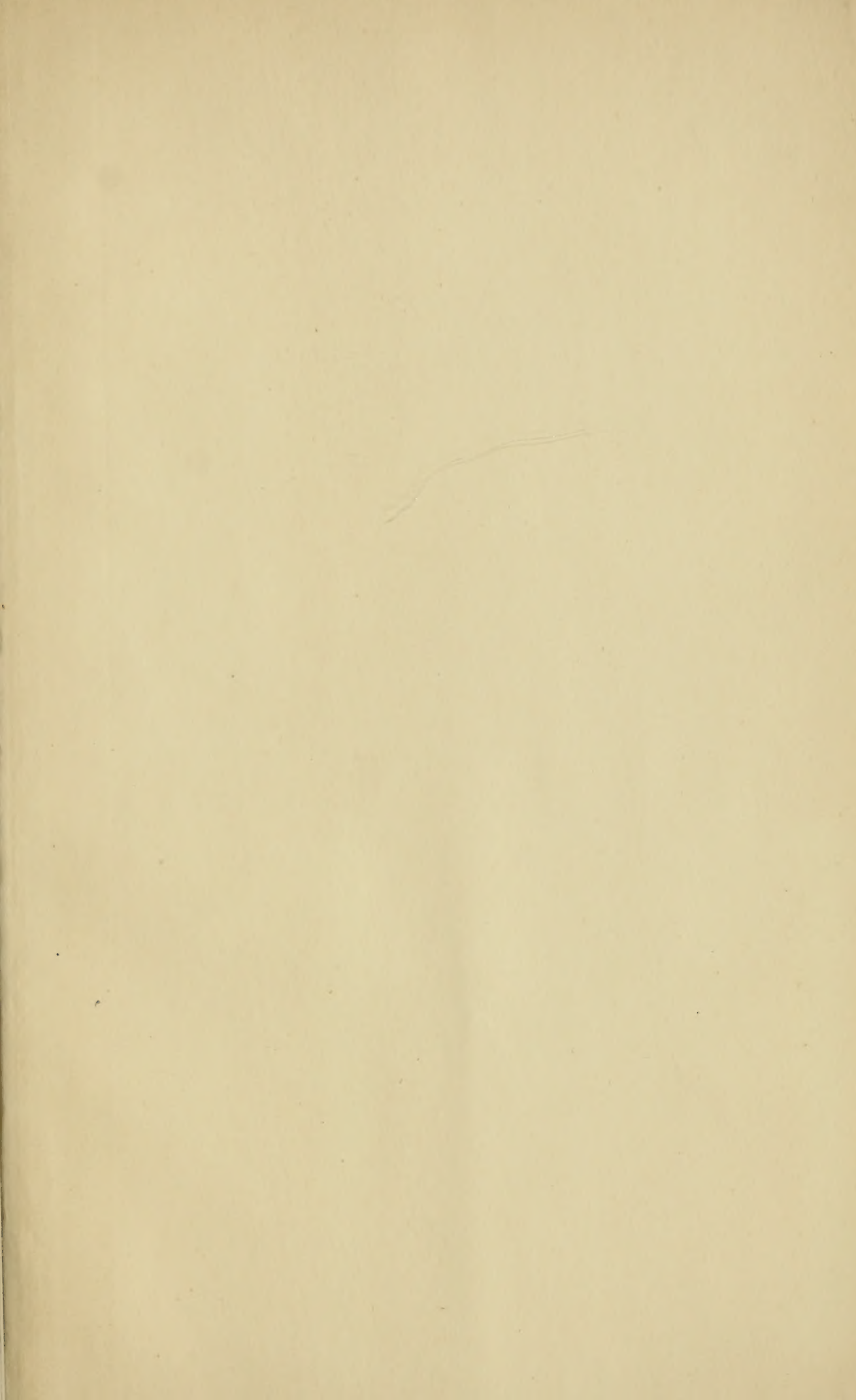
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